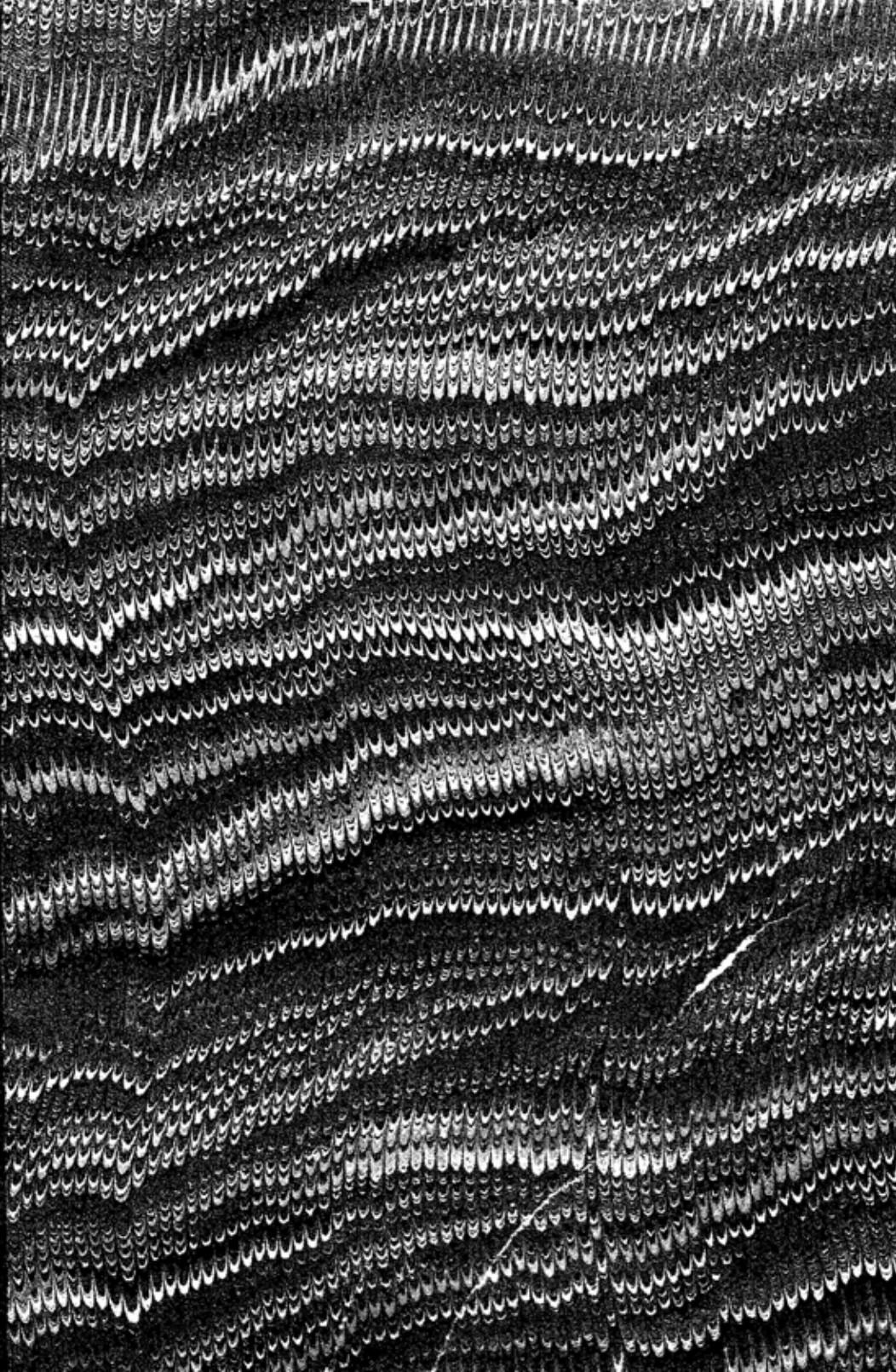


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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL.

EDITED BY

THE HONORARY SECRETARIES.



—
JANUARY TO DECEMBER,

1886.

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1887.

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LIST OF MEMBERS
OF THE
ASIATIC SOCIETY OF BENGAL.
ON THE 31ST DECEMBER, 1885.

Council and Officers for 1885.

President.

Dr. Rájendralála Mitra, LL. D., C. I. E.

Vice-Presidents.

D. Waldie, F. C. S.

H. F. Blanford, Esq., F. R. S.

Hon. H. J. Reynolds, B. A., C. S., C. S. I.

Secretaries and Treasurer.

J. Wood-Mason, Esq.

Dr. A. F. R. Hoernle.

F. E. Pargiter, Esq., B. A., C. S.

F. W. Peterson, Esq., F. C. S.

Other Members of Council.

H. B. Medlicott, Esq., F. R. S.

Nawab Abdul Latíf Khán Bahádur, C. I. E.

Lt.-Col. J. Waterhouse, B. S. C.

Alex. Pedler, Esq., F. C. S.

C. H. Tawney, Esq., M. A.

Babu Pratápchandra Ghosha, B. A.

Hon. H. Beverley, M. A., C. S.

E. F. T. Atkinson, Esq., B. A., C. S.

Dr. Mohendralal Sarkar.

A. Simson, Esq.

J. Beames, Esq., C. S.

LIST OF ORDINARY MEMBERS.

R. = Resident. N. R. = Non-Resident. N. S. = Non-Subscribing.
L. M. = Life Member. F. M. = Foreign Member.

N. B.—Members who have changed their residence since the list was drawn up are requested to give intimation of such a change to the *Secretaries*, in order that the necessary alteration may be made in the subsequent edition. Errors or omissions in the following list should also be communicated to the *Secretaries*.

Members who are about to leave India and do not intend to return are particularly requested to notify to the *Secretaries* whether it is their desire to continue members of the Society; otherwise, in accordance with Rule 40 of the Bye-Laws, their names will be removed from the list at the expiration of three years from the time of their leaving India.

Date of Election.		
1860 Dec. 5.	R.	Abdul-Latíf, Khán Bahádur, Nawab, c. i. e. <i>Calcutta</i> .
1885 Mar. 6.	R.	Abdur Rahman, A. F. M. Barrister at Law. <i>Calcutta</i> .
1860 July 4.	N.R.	Ahmad Khán Bahádur, Hon. Sayyid, c. s. i. <i>Aligarh</i> .
1872 April 3.	N.R.	Ashán-ullah, Nawáb. <i>Dacca</i> .
1860 April 4.	N.R.	Aitchison, J. E. T., m. d., Secretary to the Surgeon General, H. M.'s Forces, Bengal, with the <i>Afghan Boundary Commission</i> .
1884 Mar. 5.	L.M.	Ali Kader Syud Hossain Ali Mirza, Bahadur, Nawab Nazim of <i>Murshedabad</i> .
1874 June 3.	R.	Amír Alí, Hon., Barrister-at-Law. <i>Calcutta</i> .
1865 Jan. 11.	R.	Anderson, John, m. d., F. R. S., F. L. S., Superintendent, Indian Museum. <i>Calcutta</i> .
1884 Sept. 3.	R.	Anderson, J. A. <i>Calcutta</i> .
1875 Feb. 3.	N.R.	Armstrong, J., Surgeon, Bengal Army. <i>Naini Tal</i> .
1871 Sept. 6.	R.	Atkinson, Edwin Félix Thomas, B. A., c. s., Acctt-General, Bengal. <i>Calcutta</i> .
1869 Feb. 3.	N.R.	Attar Singh Bahádur, Sirdár, c. i. e., m. u. p. Chief of Bhadour. <i>Ludiana</i> .
1870 Feb. 2.	L.M.	Baden-Powell, Baden Henry, c. s., c. i. e., Offg. Judge, Chief Court of the Panjab. <i>Lahore</i> .
1873 Aug. 6.	N.S.	Badgley, Major William Francis, s. c., Offg. Deputy Superintendent of Surveys. <i>Europe</i> .
1862 Feb. 5.	R.	Baisák, Gaurdás, Deputy Magistrate. <i>Calcutta</i> .
1859 Aug. 3.	R.	Balaichand Siñha. <i>Calcutta</i> .
1865 Nov. 7.	N.S.	Ball, Valentine, M. A., F. R. S., F. G. S. <i>Europe</i> .

Date of Election.		
1862 Aug. 1.	R.	Barclay, Arthur, M. B., Surgeon, Bengal Medical Service. <i>Calcutta.</i>
1869 Dec. 1.	L.M.	Barker, R. A., M. D., Civil Surgeon. <i>Nya Doomka, Santhal Pergunnahs.</i>
1879 Aug. 28.	N.R.	Barkley, D. G., M. A., c. s. <i>Lahore.</i>
1885 Aug. 5.	R.	Barnett, John. <i>Calcutta.</i>
1881 Aug. 3.	N.R.	Barstow, Henry Clements, c. s., Magistrate and Collector. <i>Cawnpore.</i>
1878 June 5.	R.	Bayley, C. S., c. s., Offg. Under-Secretary to the Government of Bengal. <i>Calcutta.</i>
1873 Feb. 5.	R.	Bayne, R. R., M. E. I. B. A., Draughtsman, Chief Engineer's Office, E. I. Railway. <i>Calcutta.</i>
1864 Sept. 7.	N.R.	Beames, John, B. C. S., Offg. Commissioner, Burdwan Division. <i>Chinsurah.</i>
1878 Sept. 25.	N.R.	Beighton, T. D., c. s., Offg. Judge. <i>Patna.</i>
1881 Mar. 2.	N.R.	Benett, W. C. <i>Cawnpore.</i>
1862 Oct. 8.	N.S.	Bernard, Charles Edward, c. s., Chief Commissioner. <i>British Burmah.</i>
1872 Aug. 7.	R.	Beverley, The Hon. Henry, M. A., c. s. <i>Calcutta.</i>
1876 Nov. 15.	N.R.	Beveridge, Henry, c. s., District and Sessions Judge. <i>Faridpur.</i>
1878 Oct. 4.	R.	Bhakta, Krishna Gopal. <i>Calcutta.</i>
1879 Mar. 5.	N.R.	Biddulph, Major, J., B. S. C. <i>Europe.</i>
1884 Jan. 2.	N.R.	Bidie, G., Brigade-Surgeon, M. B., F. L. S., C. I. E., Supdt. Govt. Central Museum. <i>Madras.</i>
1884 Feb. 6.	R.	Bigg-Wither, Major A. C., B. A., A. I. C. B. <i>Calcutta.</i>
1885 Jan. 7.	N.R.	Bignold, T. F., c. s., Dist. and Session Judge. <i>Soorsee.</i>
1885 Mar. 4.	N.R.	Bilgrami, Syud Ali, B. A., A. R. S. M., F. G. S. <i>Hyderabad.</i>
1875 July 7.	N.R.	Black, F. C., Archaeological Engineer. <i>Bellary, Madras Presy.</i>
1857 Mar. 4.	L.M.	Blanford, H. F., A. R. S. M., F. R. S., F. G. S., Meteorological Reporter, Govt. of India. <i>Europe.</i>
1879 Aug. 28.	R.	Blyth, W. D., M. A., LL. D., c. s., Under-Secretary to the Govt. of Bengal. <i>Europe.</i>
1885 Mar. 4.	N.R.	Bolton, C. W., c. s., Magistrate and Collector. <i>Gya.</i>
1880 Nov. 3.	N.R.	Bose, Pramatha Nath, B. SC., F. G. S., Geological Survey of India. <i>Raipur, C. P.</i>
1877 May 2.	R.	Bourdillon, James Austin, c. s., Inspector-General of Registration. <i>Europe.</i>
1876 Nov. 15.	N.R.	Bowie, Major M. M. <i>Nagpur.</i>
1868 Jan. 15.	N.R.	Boxwell, John, c. s., Offg. Comr., Patna Divn. <i>Gya.</i>
1883 Feb. 7.	R.	Brace, Lewis Jones K., Curator of the Herbarium, Royal Botanic Garden. <i>Sibpur.</i>
1876 May 4.	N.R.	Bradshaw, Brigade-Surgeon A. F., A. M. D. <i>Quetta.</i>
1860 Mar. 7.	L.M.	Brandis, Dietrich, PH. D., F. L. S., F. R. S. <i>Europe.</i>
1885 Nov. 4.	R.	Burmun, Damoodar Das. <i>Calcutta.</i>

Date of Election.		
1879 April 2.	R.	Calcutta, The Rt. Rev. the Lord Bishop of. <i>Calcutta</i> .
1869 Jan. 20.	N.R.	Cadell, Alan, B. A., c. s., Magte. <i>Aligarh, N. W. P.</i>
1880 Mar. 3.	N.R.	Carlleyle, A. C., Archaeological Survey of India. <i>Allahabad</i> .
1881 Feb. 2.	N.R.	Carter, Philip John, Deputy Conservator of Forests. <i>Rangoon</i> .
1876 Nov. 15.	R.	Cayley, Surgeon-Major H., Surgeon, Mayo Native Hospital. <i>Europe</i> .
1885 April 1.	R.	Chamber, J. W. <i>Calcutta</i> .
1881 Mar. 2.	N.R.	Channing, Francis Chorley, B. C. S. <i>Europe</i> .
1883 Aug. 30.	N.R.	Chatterji, Dr. Aghorenath. <i>Hyderabad</i> .
1881 Mar. 2.	N.R.	Chatterji, Bhairab Chunder. <i>Jessore</i> .
1880 May 5.	N.R.	Chatterji, Tara Prasada, Deputy Magte. <i>Burdwan</i> .
1880 Jan. 7.	R.	Chaudhuri, Govinda Kumara. <i>Calcutta</i> .
1861 Mar. 1.	N.R.	Chaudhuri, Haranchandra, Zamindar. <i>Sherpur, Maimansingh</i> .
1880 Nov. 3.	N.R.	Chaudhuri, Khirode Chandra Roy. <i>Berhampore College</i> .
1885 Feb. 4.	N.R.	Chaudhuri, Raja Suryakanta, Bahadur. <i>Mymensing</i> .
1874 Aug. 5.	N.R.	Chennell, A. W., Asst. Surveyor, Survey Department. <i>Shillong</i> .
1885 April 1.	R.	Clark, H. Martyn. <i>Calcutta</i> .
1877 Aug. 30.	N.S.	Clarke, Major Henry Wilberforce, R. E. <i>Europe</i> .
1880 Aug. 26.	N.R.	Clerk, Lieut.-Colonel Malcolm G., Commandant of the Fort. <i>Chunar, N. W. P.</i>
1881 May 4.	N.R.	Cockburn, John, Asst. Sub-Depy. Opium Agent. <i>Karwi</i> .
1884 April 2.	N.R.	Cole, Major H. H., R. E. <i>Mhow</i> .
1884 Mar. 5.	R.	Colvin, The Hon. Sir Auckland, K. C. M. G. <i>Calcutta</i> .
1874 Nov. 4.	N.R.	Constable, Archibald, Resident Engineer and Personal Asst. to Chief Engineer, Oudh and Rohilkund Railway. <i>Lucknow</i> .
1881 Mar. 2.	N.R.	Cook, Capt. L. A. C. <i>Jamrud</i> .
1884 Aug. 6.	R.	Cotes, E. C., Indian Museum. <i>Calcutta</i> .
1876 Mar. 1.	N.R.	Crawfurd, James, B. A., c. s., Barrister-at-Law, Offg. District and Sessions Judge. <i>Nuddea</i> .
1877 June 6.	R.	Croft, Hon. A. W., M. A., Director of Public Instruction. <i>Calcutta</i> .
1874 Mar. 4.	N.S.	Crombie, Alexander, M. D., Civil Surgeon. <i>Europe</i> .
1883 April 4.	N.R.	Crosthwaite, Hon. C. H. T., c. s., Chief Commissioner, Central Provinces. <i>Nagpur</i> .
1873 Aug. 6.	R.	Cunningham, David Douglas, M. D., Professor, Medical College. <i>Calcutta</i> .
1873 Dec. 3.	N.R.	Dames, Mansel Longworth, c. s., Asst. Commissioner. <i>Dera Ismail Khan</i> .
1877 June 6.	N.R.	Darbhanga, H. H. the Mahárájá of. <i>Darbhanga</i> .

Date of Election.		
1865 June 7.	N.R.	Dás, Rájá Jaykishan, Bahádur, c. s. i. <i>Bijnor</i> .
1879 April 7.	N.R.	Dás, Rám Saran, m. a., Secy. Oudh Commercial Bank, Limited. <i>Fyzabad, Oudh</i> .
1869 April 7.	F.M.	Day, Dr. Francis, F. L. S., F. z. s. <i>Europe</i> .
1885 May 6.	N.R.	Dé, Kumar Baikantanath. <i>Balasore</i> .
1885 Jan. 7.	R.	De Prée Col. G. C. <i>Surveyor General of India, Calcutta</i> .
1859 Oct. 6.	N.R.	Delmerick, J. G., Extra Assistant Commissioner. <i>Mussoorie</i> .
1862 May 7.	N.R.	Dhanapati Singh Dughar, Rai Bahádur. <i>Asimganj</i> .
1880 Dec. 1.	N.R.	Dilawar Husein Ahmad, Maulaví, Depy. Magte., and Depy. Collr. <i>Jamui, Monghyr</i> .
1877 July 4.	R.	Diler Jang, Nawáb Syad Ashgar Ali, Khan Bahadur, c. s. i. <i>Calcutta</i> .
1875 Mar. 3.	R.	Douglas, J. C., Supdt. of Telegraph Stores. <i>Alipore</i> .
1882 Mar. 1.	N.R.	Douie, J. M., c. s., Settlement Officer. <i>Karnal, Panjab</i> .
1879 Feb. 5.	N.R.	Duthie, J. F., Superintendent, Govt. Botanical Gardens. <i>Saharanpur</i> .
1877 Aug. 30.	R.	Dutt, Kedarnath, Depy. Magistrate. <i>Calcutta</i> .
1881 Mar. 2.	F.M.	Eden, The Hon'ble Sir Ashley, k. c. s. i., c. i. e. <i>Europe</i> .
1870 Mar. 9.	L.M.	Edinburgh, H. R. H. The Duke of. <i>Europe</i> .
1863 May 6.	R.	Edgar, John Ware, c. s., c. s. i. <i>Calcutta</i> .
1874 Dec. 2.	N.S.	Egerton, The Hon. Sir Robert Eyles, c. s., k. c. s. i., c. i. e. <i>Europe</i> .
1871 Dec. 2.	N.S.	Eliot, J., m. a., Meteorological Reporter to the Govt. of Bengal. <i>Europe</i> .
1863 Jan. 15.	N.S.	Fedden, Francis, Asst., Geological Survey of India. <i>Europe</i> .
1876 Jan. 5.	F.M.	Feistmantel, Ottokar, m. d., Palaeontologist, Geological Survey of India. <i>Europe</i> .
1880 April 7.	N.R.	Fiddian, W., m. a., c. s., Offg. Magistrate and Collector. <i>Birbhum</i> .
1879 July 2.	R.	Finucane, M., c. s., Director of Agriculture, Bengal. <i>Calcutta</i> .
1869 Sept. 1.	N.S.	Fisher, John Hadden, c. s. <i>Europe</i> .
1876 July 5.	N.R.	Foulkes, The Rev. Thos., F. L. S., M. R. A. S., F. R. G. S., Chaplain. <i>Coimbatore, Madras Presy.</i>
1869 Sept. 1.	N.R.	Fryer, Colonel G. E., m. s. c. Deputy Commissioner. <i>Thayetmo, B. Burmah</i> .
1880 April 7.	N.R.	Gajapati, Ananda Ram, Raja of Vizianagram. <i>Vizianagram</i> .
1873 Dec. 3.	N.R.	Gamble, J. S., m. a., Conservator of Forests, Northern Circle. <i>Madras</i> .

Date of Election.			
1883 Aug. 1.	N.R.	Garga, Kumar Isvariprasad, Zemindar. <i>Maisádal.</i>	
1859 Aug. 3.	L.M.	Castrell, Major-General James Eardley, (retired). <i>Europe.</i>	
1867 Dec. 4.	R.	Gay, E., M. A., F. R. A. S., Accountant-General. <i>Bombay.</i>	
1883 Aug. 30.	R.	Ghose, Manomohan. <i>Calcutta.</i>	
1871 May 3.	R.	Ghoshal, Káliprasanna. <i>Calcutta.</i>	
1869 Feb. 3.	R.	Ghoshal, Pratápachandra, B. A. <i>Calcutta.</i>	
1880 Aug. 4.	F.M.	Gibbs, The Hon. James, C. S. I., C. I. E., F. R. G. S., M. R. A. s., Member of the Governor-General's Council. <i>Europe.</i>	
1884 Dec. 3.	N.R.	Giles, George M., M. B., F. R. C. S., Surgeon Naturalist, S. S. "Investigator." <i>Sandoway.</i>	
1875 July 7.	N.R.	Girdlestone, Charles Edward Ridgway, c. s., Resi- dent. <i>Katmandu, Nepal.</i>	
1861 Feb. 5.	F.R.	Godwin-Austen, Lieut.-Colonel H. H., F. R. S., F. Z. S., F. R. G. S. <i>Europe.</i>	
1882 May 3.	R.	Golam Sarwar, Maulaví. <i>Calcutta.</i>	
1862 July 2.	N.S.	Gordon, Robert, c. E., Executive Engineer, P. W. D. <i>Europe.</i>	
1885 Mar. 4.	R.	Gore-Brown, Spencer, E. I. Railway. <i>Calcutta.</i>	
1881 Mar. 2.	R.	Gosain, Hem Chunder. <i>Calcutta.</i>	
1863 Nov. 4.	F.M.	Gowan, Major-General J. Y. <i>Europe.</i>	
1879 Jan. 8.	N.R.	Gowan, Major W. E. <i>Simla.</i>	
1877 Nov. 7.	L.M.	Grant, Alexander, M. I. C. E., Director of State Rail- ways. <i>Europe.</i>	
1876 Nov. 15.	F.M.	Grierson, George Abraham, c. s. <i>Bankipur.</i>	
1885 Dec. 2.	N.R.	Griesbach, C. L. <i>Deputy Superintendent Geological Survey of India, with the Afghan Boundary Com- mission.</i>	
1861 Sept. 4.	N.S.	Griffin, Sir Lepel Henry, C. S., K. C. S. I. <i>Europe.</i>	
1861 Feb. 6.	N.R.	Growse, Frederick Salmon, M. A., C. S., C. I. E., Mag- istrate and Collector. <i>Fatehpur, N. W. P.</i>	
1880 Feb. 4.	R.	Gupta, Behárlál, c. s. <i>Calcutta.</i>	
1883 June 6.	N.R.	Gúrdyál Singh, Sírdár, c. s., Asst. Commissioner. <i>Hoshiarpur, Panjab.</i>	
1867 July 3.	N.R.	Hacket, Charles Augustus, Assistant Geol. Survey of India. <i>Camp Abu, Rajputana.</i>	
1883 Jan. 3.	N.R.	Harding, Francis Henry, B. A., c. s. <i>Europe.</i>	
1879 Mar. 5.	N.S.	Harraden, S. <i>Calcutta.</i>	
1877 Sep. 27.	R.	Harraden, S. <i>Calcutta.</i>	
1875 Mar. 3.	N.R.	Hart, J., Attorney-at-Law. <i>Calcutta.</i>	
1883 May 2.	N.R.	Hendley, Surgeon Major Thomas Holbein. <i>Jeypore.</i> Hill, Samuel Alexander, B. SC., A. R. S. M., F. C. S., Prof. of Physical Science, Muir College and Meteor. Reporter to Govt., N. W. P. and Oudh. <i>Allahabad.</i>	
1872 Dec. 4.	R.	Hoernle, Rev. A. F. R., PH. D., Principal of the Madrasah. <i>Calcutta.</i>	

Date of Election.		
1878 Mar. 6.	N.R.	Hoey, W. <i>Lucknow.</i>
1884 Mar. 5.	N.R.	Holdsworth-Fisher, John, Professor, Hooghly College. <i>Chinsurah.</i>
1884 Mar. 5.	N.R.	Hooper, John, c. s., Settlement Officer. <i>Basti, N. W. P.</i>
1873 Jan. 8.	L.M.	Houston, G. L., F. G. S. <i>Europe.</i>
1863 Jan. 15.	N.R.	Howell, Mortimer Sloper, c. s. <i>Mirzapur, N. W. P.</i>
1878 Sep. 25.	N.R.	Hughes, G., c. s. <i>Rupar, Amballa.</i>
1867 Aug. 7.	N.R.	Hughes, T. H., A. R. S. M., F. G. S., Geol. Survey of India. <i>Kutni, E. I. R.</i>
1866 Jan. 17.	N.S.	Hughes, Major W. G., m. s. c. <i>Europe.</i>
1870 Jan. 5.	N.R.	Hume, Allan Octavian, c. b., c. s. <i>Allahabad.</i>
1884 May 2.	N.R.	Hussein, Syud, b. a., Secy. to Nizam of Hyderabad's Council.
1872 Dec. 4.	N.R.	Ibbetson, Denzil Charles Jelf, c. s. <i>Lahore.</i>
1866 Mar. 7.	N.R.	Irvine, William, c. s., Magistrate and Collector. <i>Ghasipur.</i>
1884 May 2.	N.R.	Iskander Ali Mirza, Prince. <i>Murshedabad.</i>
1853 Dec. 7.	N.R.	Isvariprasad Singh, Maharaja, g. c. s. i. <i>Benares.</i>
1874 Feb. 4.	N.R.	Jackson, Surgeon Major Charles Julian J. <i>Berhampur.</i>
1880 Dec. 1.	N.S.	Jackson, William Grierson, b. c. s. <i>Europe.</i>
1869 Aug. 4.	R.	Jahán Qadr Muhammad Wáhid Álí, Bahádur, Prince. <i>Garden Reach, Calcutta.</i>
1876 July 5.	N.S.	Jarrad, Lieut. F. W., R. N., F. R. A. S., Marine Survey Dept. <i>Europe.</i>
1879 Mar. 5.	R.	Jarrett, Lt.-Col. H. S., B. S. C., Secy. to the Board of Examiners. <i>Calcutta.</i>
1881 Feb. 2.	N.R.	Jenkins, Capt. Thomas Morris, m. s. c., Asst. Commissioner and J. P. for Burmah. <i>Bassein.</i>
1862 Mar. 5.	N.R.	Johnstone, Lieut.-Colonel James William Hope, <i>Europe.</i>
1867 Dec. 4.	N.S.	Johnstone, Lt.-Col. James, Political Agent. <i>Europe.</i>
1878 Aug. 7.	N.S.	Johnstone, P. DeLacy, c. s. <i>Europe.</i>
1873 Dec. 3.	N.R.	Johore, H. H. the Mahárájá of, k. c. s. i. <i>New Johore, Singapore.</i>
1884 Aug. 6.	N.R.	Jones, E. J., Geol. Survey of India. <i>Chhindwara.</i>
1875 Nov. 3.	N.R.	Jones, S. S., b. a., c. s. <i>Rangpur.</i>
1869 April 7.	R.	Kabíruddín Ahmad, Maulaví. <i>Calcutta.</i>
1882 Mar. 1.	R.	Kennedy, Pringle, m. a. <i>Calcutta.</i>
1874 Dec. 2.	N.R.	Khudábaksh, Khan Bahadur, Maulaví. <i>Bankipur.</i>
1884 Nov. 5.	N.R.	Kitts, Eustace John, c. s. <i>Azamgarh, N. W. P.</i>
1867 Dec. 4.	R.	King, G., M. B., F. L. S., Supdt., Royal Botanic Garden. <i>Sibpur.</i>
1881 Mar. 2.	N.R.	King, Lucas White, B. A., LL. B., c. s. <i>Peshawar.</i>

Date of Election.		
1862 Jan. 15.	N.R.	King, W., Jr., B. A., F. G. S., Depy. Supdt. of Madras Geol. Survey of India. <i>Kutni</i> , <i>E. I. R.</i>
1880 Dec. 1.	N.S.	Kirton, Surgeon-Major William Henry, F. L. S., Medical Store-Keeper. <i>Europe</i> .
1880 Jan. 7.	R.	Kisch, H. M., M. A., c. s. <i>Calcutta</i> .
1877 Jan. 17.	N.R.	Kishor, Kumara Radha Dev, Juvráj of Hill Tipperah. <i>Tipperah</i> .
1882 June 7.	N.R.	Kishore Singh, Maharaja Kumar Harendra. <i>Bettiah</i> .
1884 Sept. 3.	R.	Kumar Indra Chandra Singh of Paikparrah. <i>Calcutta</i> .
1885 Mar. 4.	R.	Kumar Nilkrishna. <i>Calcutta</i> .
1885 April 1.	R.	Kumar Sarat Chunder Singh. <i>Calcutta</i> .
1883 Aug. 30.	N.R.	Kuster, E. E. A. <i>Darbhanga</i> .
1878 Oct. 4.	N.R.	Lachman Sing, Reja. <i>Bulandshahr</i> .
1877 Sep. 27.	N.R.	La Touche, James John Digges, B. A., c. s. <i>Gorakhpur</i> .
1881 Feb. 2.	R.	Laughlin, Robert Campbell, Asst. Supdt., Govt. Telegraph Department. <i>Calcutta</i> .
1881 Mar. 2.	N.R.	Lee, J. Bridges, M. A., F. G. S., F. C. S., F. Z. S., Barrister-at-law. <i>Lahore</i> .
1880 July 7.	N.R.	Lewis, Rev. Arthur, B. A., Vice-Principal, St. John's Divinity School. <i>Lahore</i> .
1873 Feb. 5.	N.S.	Lewis, Timothy Richards, M. B., Special Asst. to the Sanitary Commissioner with the Government of India. <i>Europe</i> .
1869 July 7.	N.R.	Lyall, Charles James, B. A., c. s. <i>Shillong</i> .
1870 April 7.	L.M.	Lyman, B. Smith. <i>Northampton, Mass.</i> , U. S., <i>America</i> .
1884 Dec. 3.	N.R.	McCabe, R. B., c. s. <i>Kohima, Naga Hills, Assam</i> .
1868 Dec. 2.	N.R.	Macauliffe, Michael, B. A., c. s., Judicial Assistant. <i>Gujrat, Panjab</i> .
1880 June 2.	N.R.	Macdonald, James, c. e. <i>Rurki</i> .
1884 Mar. 5.	R.	Macdonnell, A. P., B. A., c. s., Offg. Secy., Govt. of Bengal. <i>Calcutta</i> .
1879 Feb. 5.	N.R.	Macgregor, Major C. R., F. R. G. S., 44th N. I. <i>Dibrugarh</i> .
1848 April 5.	L.M.	Maclagan, Major-General Robert, R. E., F. R. S. E., F. R. G. S. <i>Europe</i> .
1873 Dec. 3.	R.	MacLeod, Surgeon-Major Kenneth, M. D. <i>Calcutta</i> .
1880 May 5.	N.R.	MacLeod, Roderick Henry, B. C. S., Asst. Magistrate. <i>Kasia, Gorakhpur, N. W. P.</i>
1881 July 6.	R.	Mahomed Firukh Shah, Prince. <i>Calcutta</i> .
1882 Aug. 2.	R.	Mahomed Yussof, Hon. Moulvie. <i>Calcutta</i> .
1867 April 3.	R.	Mainwaring, Major-General George Byres, s. c. <i>Serampur</i> .

Date of Election.		
1878 April 3.	R.	Mallet, F. R., Geological Survey of India. <i>Calcutta</i> .
1864 July 6.	R.	Mallik, Coomar Debendra. <i>Calcutta</i> .
1869 Sept. 1.	R.	Mallik, Yadulál. <i>Calcutta</i> .
1880 May 5.	N.R.	Mandalik, The Hon. Rao Sahib Visvanath Narayana, o. s. i. <i>Bombay</i> .
1869 July 7.	N.R.	Markham, Alexander Macaulay, c. s., F. R. G. S., Collector. <i>Banda</i> .
1873 July 2.	N.R.	Marshall, C. W. <i>Gonatea, Synthia, Bengal</i> .
1877 Feb. 7.	N.S.	Marshall, Major George Fred. Lycester, R. E., Asst. Secy., Govt. of India, P. W. D. <i>Europe</i> .
1860 Mar. 7.	R.	Medlicott, H. B., M. A., F. R. S., F. G. S., Supdt., Geological Survey of India. <i>Calcutta</i> .
1877 Mar. 7.	N.R.	Medlycott, Rev. Adolphus Edwin, Ph. D., Military Chaplain. <i>Ferozepur, Panjab</i> .
1884 Nov. 5.	N.R.	Middlemiss, C. S. <i>Chakrata, N. W. P.</i>
1871 Sept. 6.	F.M.	Miles, Lieut.-Colonel S. B., s. c., Political Agent. <i>Muscat</i> .
1884 Sept. 3.	R.	Miles, William Harry. <i>Calcutta</i> .
1870 July 6.	R.	Miller, A. B., B. A., Barrister-at-law, Official Assignee. <i>Calcutta</i> .
1874 May 6.	N.R.	Minchin, F. J. V. <i>Aska, Ganjan</i> .
1875 Aug. 4.	N.R.	Minchin, Colonel, C. O. <i>Hissar, Panjab</i> .
1884 Dec. 3.	N.R.	Mirza Saraiya Jah Bahadur, Prince.
1856 Mar. 5.	R.	Mitra, Rájendralála, Rái Bahádúr, LL. D., C. I. E. <i>Calcutta</i> .
1876 Dec. 6.	F.M.	Mockler, Major E., British Consul. <i>Basrah, Persian Gulf</i> .
1881 May 4.	N.R.	Molloy, Major Edward, 5th Goorkhas. <i>Abbotabad, Hazara, Panjab</i> .
1884 June 4.	R.	Moncreiffe, T. G. H. <i>Calcutta</i> .
1884 Apr. 2.	R.	Mondy, Edmund F., Civil Engineering Coll. <i>Sibpur</i> .
1881 Dec. 7.	F.M.	Monteath, J. J., M. D. <i>Silchar</i> .
1864 Nov. 2.	N.R.	Muir, J. W., M. A., C. S. <i>Mirzapore</i> .
1879 May 7.	R.	Mukerjea, Bhudeva, C. I. E. <i>Calcutta</i> .
1883 May 2.	R.	Mukerji, Rajkrishna, M. A., B. L., Bengali translator to Govt. <i>Calcutta</i> .
1867 Mar. 6.	R.	Mukerjea, The Hon. Pearimohan, M. A. <i>Uttarpara</i> .
1882 Jan. 4.	R.	Mukerji, Girijabhusan, M. A. <i>Calcutta</i> .
1885 July 1.	R.	Mukerjea, Nilmoney, Professor Sanskrit College. <i>Calcutta</i> .
1885 June 3.	N.R.	Naemwoollah, Maulvi, Depy. Magte. <i>Bulandshahr</i> .
1880 Aug. 26.	N.R.	Nag, Sib Chunder. <i>Bakarganj</i> .
1880 Dec. 1.	R.	Napier, J. R. <i>Calcutta</i> .
1882 Aug. 2.	N.R.	Narain Singh, Raja Ram. <i>Khyrah, Monghyr</i> .
1876 May 4.	R.	Nash, A. M., M. A., Professor, Presidency College. <i>Calcutta</i> .

Date of Election.		
1881 Nov. 2.	R.	Nicéville, L. de. <i>Calcutta</i> .
1869 July 7.	N.R.	Nursing Rao, A. V. <i>Vizagapatam</i> .
1885 Feb. 4.	R.	Nyaratna, Pandit Maheschandra. <i>Calcutta</i> .
1871 July 5.	N.R.	Oates, E. W., c. e., Engineer, P. W. D., Garrison Div., Sittang Canal. <i>Europe</i> .
1879 Aug. 28.	N.R.	Oldham, Surgeon-Major C. F., F. R. G. S. <i>Europe</i> .
1883 Dec. 1.	N.R.	Oldham, R. D., A. R. S. M., Asst., Geol. Sur. of India.
1883 Aug. 30.	N.R.	Oliver, Edw. Emmerson, M. I. C. E., Asst. Secy. to Govt. Panjab, P. W. D. <i>Lahore</i> .
1885 Feb. 4.	F.M.	Oliver, James William, Forest Dept. <i>Europe</i> .
1880 Aug. 4.	L.M.	Pandia, Pandit Mohanlall Vishnulall, F. R. S., Member and Secy., Royal Council of Meywar. <i>Oodeypur</i> .
1880 Jan. 7.	R.	Pargiter, Frederick E., B. A., c. s., Officiating Commissioner of the Sundarbans. <i>Calcutta</i> .
1880 Jan. 7.	N.R.	Parry, J. W., c. e., ASSOC. M. I. C. E., Asst. Engineer. <i>Nundial viâ Cuddapah, Madras</i> .
1862 May 7.	L.M.	Partridge, Surgeon-Major Samuel Bowen, M. D. <i>Europe</i> .
1871 Dec. 6.	N.R.	Peal, S. E. <i>Sibsagar, Assam</i> .
1860 Feb. 1.	F.M.	Pearse, Major-General G. G., C. B., B. H. A. <i>Europe</i> .
1873 Aug. 6.	R.	Pedler, Alexander, F. C. S., Professor of Chemistry, Presidency College. <i>Calcutta</i> .
1864 Mar. 2.	N.S.	Pellew, Fleetwood Hugo, c. s. <i>Europe</i> .
1865 Sept. 6.	N.R.	Peppé, T. F. <i>Arrah</i> .
1881 Aug. 25.	R.	Percival, Hugh Melville, M. A., Professor, Presidency College. <i>Calcutta</i> .
1883 Jan. 3.	N.R.	Plowden, Major Trevor C. <i>Simla</i> .
1877 Aug. 1.	N.R.	Peters, C. T., M. B., Surgeon-Major. <i>Bombay</i> .
1868 May 6.	R.	Peterson, F. W., F. C. S., H. M.'s Mint. <i>Calcutta</i> .
1872 Dec. 4.	R.	Pránnáth Sarasvati, Pandit, M. A., B. L. <i>Bhowanipur</i> .
1880 June 2.	N.R.	Prasad Sinh, Thakur Garuradhawaya, Rajah of Beswan. <i>Beswan Fort, Aligarh</i> .
1877 Aug. 30	N.R.	Pratapnarayan Singh, Depy. Magte. <i>Bankura</i> .
1881 Feb. 2.	R.	Prideaux, Major William Francis, B. S. C. <i>Calcutta</i> .
1880 April 7.	N.R.	Rai, Bipina Chandra, B. L. <i>Rungpore</i> .
1877 Aug. 1.	N.R.	Rees, J. C., Asst. Engr., P. W. D. <i>Thonzai, British Burmah</i> .
1871 July 5.	N.R.	Reid, James Robert, c. s., Collector. <i>Bareilly, Rohilkund</i> .
1881 Mar. 2.	R.	Reynolds, The Hon'ble Herbert John, B. A., C. S. <i>Calcutta</i> .
1880 Aug. 4.	N.R.	Reynolds, Herbert William Ward, c. s. <i>Allahabad</i> .

Date of Election.		
1884 Mar. 5.	N.R.	Risley, H. H., B. A., c. s., Depy. Comr. <i>Manbhoom.</i>
1860 Jan. 3.	N.R.	Rivett-Carnac, John Henry, c. s., C. I. E., F. S. A., Opium Agent. <i>Ghazipur.</i>
1878 Sep. 25.	N.S.	Robertson, Rev. J. <i>Europe.</i>
1865 Feb. 1.	N.S.	Robinson, S. H. <i>Europe.</i>
1881 Aug. 30	N.R.	Roy, Nanda Kumar. <i>Central Provinces.</i>
1885 Mar. 4.	R.	Rustomjee, H. M. <i>Calcutta.</i>
1880 Sep. 30.	N.R.	Sage, E. M., Asst. Engineer, P. W. D. <i>Tavoy, British Burmah.</i>
1877 May 2.	N.R.	Sandford, W. <i>Rajputana-Malwa Railway. Ajmers, Rajputana.</i>
1885 Feb. 4.	R.	Sastri, Haraprasad, M. A. <i>Calcutta.</i>
1885 Mar. 4.	R.	Sarvádilákári, Rajakumár. <i>Calcutta.</i>
1870 May 4.	R.	Schlích, Dr. W. <i>Calcutta.</i>
1884 April 2.	N.R.	Scotland, John Parry, c. e., Ex. Engineer. <i>Buxar.</i>
1874 July 1.	F.M.	Scully, Dr. John. <i>H. M.'s Mint, Calcutta.</i>
1874 Dec. 2.	N.R.	Sen, Dr. Rám Dás. <i>Berhampur.</i>
1885 April 1.	R.	Sen, Yadunath. <i>Calcutta.</i>
1885 April 1.	R.	Sen, Narendranath. <i>Calcutta.</i>
1882 June 7.	N.S.	Senart, Emile, Membre de l'Institut de France. <i>Paris.</i>
1882 Aug. 2.	R.	Serajul Islam, Maulavi. <i>Calcutta.</i>
1879 Jan. 8.	N.R.	Sewell, R., m. c. s. <i>Madras.</i>
1879 May 7.	N.S.	Sheridan, C. J., c. e. <i>Europe.</i>
1881 Mar. 2.	N.R.	Shopland, E. R., Indian Marine, Port Officer. <i>Akyab.</i>
1882 May 3.	N.R.	Shyamaldass, Kavirájó, Private Secy. to H. H. the Mahárána of Udaipur. <i>Udaipur.</i>
1878 April 3.	R.	Simson, A. <i>Calcutta.</i>
1867 April 3.	R.	Sirkár, Dr. Mahendralála. <i>Calcutta.</i>
1872 Aug. 5.	N.R.	Skrefsrud, Rev. L. O., Indian Home Mission to the Santháls. <i>Europe.</i>
1864 Sept. 7.	N.R.	Sladen, Col. E. B., m. s. c. <i>Akyab.</i>
1885 Nov. 4.	R.	Smith, N. F. F. <i>Calcutta.</i>
1874 June 3.	N.R.	Smith, Vincent Arthur, c. s., Settlement Officer. <i>Basti, N.-W. P.</i>
1872 July 3.	N.R.	Stephen, Carr, B. L., Judl. Asst. Commr. <i>Ludianah.</i>
1879 Oct. 2.	N.S.	Sterndale, R. A., F. R. G. S., Asst. Commr. of Currency. <i>Bombay.</i>
1882 May 3.	R.	Stewart, H. E. Sir Donald M., Bart., G. C. B., G. C. S. I., Commander-in-Chief. <i>Calcutta.</i>
1878 July 3.	N.R.	St. Barbe, H. L., c. s. <i>Bassein, British Burmah.</i>
1876 Aug. 2.	N.R.	St. John, Lieut.-Col. Sir Oliver Beauchamp, R. E., K. C. S. I., Officer on special duty. <i>Kashmir.</i>
1880 Nov. 3.	N.R.	Sturt, Lieut. Robert Ramsay Napier, B. S. C., Panjab Frontier Force. <i>Kohar.</i>
1884 Mar. 5.	N.R.	Swinhoe, Lieut.-Col. C., B. S. C., Asst. Comy. Genl. <i>Bombay.</i>

Date of Election.		
1864 Aug. 11.	R.	Swinhoe, W., Attorney-at-Law. <i>Calcutta</i> .
1880 Nov. 3.	N.R.	Swynnerton, Rev. Charles. <i>Naushera</i> .
1885 April 1.	N.R.	Syad Mahdi Ali Nawaz Jang, Bahadur, Maulvi. <i>Hyderabad</i> .
1880 June 2.	N.S.	Sykes, John Gastrell, LL. B., Barrister-at-Law and Advocate, High Court, N. W. P. <i>Europe</i> .
1868 June 3.	R.	Tagore, The Hon'ble Mahárájá Jotendra Mohun, K. C. S. I. <i>Calcutta</i> .
1865 Sept. 6.	R.	Tawney, C. H., M. A., Principal, Presidency College. <i>Europe</i> .
1874 Mar. 4.	N.S.	Taylor, Commander A. D., late Indian Navy. <i>Europe</i> .
1884 May 5.	N.R.	Taylor, W. C., Settlement Officer, Khudra.. <i>Orissa</i> .
1860 May 2.	N.S.	Temple, Sir R., Bart., K. C. S. I., C. I. E., B. C. S. <i>Europe</i> .
1878 June 5.	N.R.	Temple, Capt. R. C., s. c. <i>Ambala</i> .
1876 Feb. 2.	N.S.	Tennant, Major-General James Francis, R. E., F. R. S., C. I. E., Mint Master. <i>Europe</i> .
1875 June 2.	N.R.	Thibaut, Dr. G., Professor, Sanskrit College. <i>Benares</i> .
1875 Nov. 3.	N.R.	Thomson, Robert George, c. s., Asst. Comr. <i>Jhelum, Panjab</i> .
1847 June 2.	L.M.	Thuillier, Major-Genl. Sir Henry Edward Landor, R. A., C. S. I., F. R. S. <i>Europe</i> .
1883 June 6.	N.R.	Toker, Lieut.-Col. Alliston Champion, B. S. C., 18th N. I. <i>Dinapoor</i> .
1871 April 5.	F.M.	Trefftz, Oscar. <i>Europe</i> .
1861 June 5.	L.M.	Tremlett, James Dyer, M. B., C. S., Commissioner. <i>Delhi</i> .
1872 July 3.	R.	Trevor, Colonel William Spottiswoode, R. E., with the Supreme Govt. <i>Calcutta</i> .
1880 Mar. 3.	N.R.	Tufnell, Lieut. R. H. C., 30th M. N. I. <i>Madras</i> .
1863 May 6.	N.R.	Tyler, J. W. M. D., F. B. C. S., Supdt., Central Prison. <i>Agra</i> .
1885 May 6.	R.	Veradeau, Ivan. <i>Calcutta</i> .
1865 Nov. 1.	R.	Waldie, David, F. C. S. <i>Calcutta</i> .
1865 May 3.	R.	Waterhouse, Lt.-Col. James, B. S. C., Dy. Supdt., Survey of India. <i>Calcutta</i> .
1874 July 1.	R.	Watt, Dr. George. <i>Calcutta</i> .
1876 Dec. 6.	R.	Webb, W. T., M. A., Professor, Presidency College. <i>Calcutta</i> .
1869 Sept. 1.	N.S.	Westland, James, C. S., Comptroller-General. <i>Calcutta</i> .
1875 Feb. 3.	N.R.	Whiteway, Richard Stephen, C., S., Settlement Officer. <i>Ajmere and Merwara</i> .

Date of Election.		
1878 Aug. 29	N.S.	Whittall, R., Forest Dept. <i>Europe.</i>
1873 May 7.	N.R.	Williams, George Robert Carlisle, B. A., c. s., Depy. Commissioner. <i>Jhansi.</i>
1880 Feb. 4.	N.S.	Wilson, The Hon. Arthur. <i>Europe.</i>
1870 Aug. 3.	N.R.	Wilson, Robert Henry, B. A., c. s. <i>Calcutta.</i>
1878 Mar. 6.	N.R.	Wilson, J., c. s. <i>Gurgaon, Punjab.</i>
1866 Mar. 7.	L.M.	Wise, Dr. J. E. N. <i>Rostellan, County Cork, Ireland.</i>
1870 Jan. 5.	R.	Wood-Mason, James. <i>Calcutta.</i>
1873 Aug. 6.	N.R.	Woodthorpe, Lieut.-Col. Robert Gossett, R. E., Asst. Supdt., Survey of India. <i>Camp viâ Dibrugarh, Upper Assam.</i>

SPECIAL HONORARY CENTENARY MEMBERS.

Date of Election.

1884 Jan. 15.	James Prescott Joule, Esq., LL. D., F. R. S. <i>Manchester.</i>
1884 Jan. 15.	Dr. Ernst Haeckel, Professor in the University of <i>Jena.</i>
1884 Jan. 15.	Charles Meldrum, Esq., M. A., F. R. S. <i>Mauritius.</i>
1884 Jan. 15.	A. H. Sayce, Esq., Professor of Comp. Philology, <i>Oxford.</i>
1884 Jan. 15.	M. Emile Senart, Member of the Institute of France, <i>Paris.</i>
1884 Jan. 15.	Monier Williams, Esq., Boden Prof. of Sanskrit, <i>Oxford.</i>

HONORARY MEMBERS.

1848 Feb. 2.	Sir J. D. Hooker, K. C. S. I., C. B., M. D., D. C. L., F. R. S. F. G. S. <i>Kew.</i>
1853 April 6.	Major-General H. C. Rawlinson, K. C. B., D. C. L., F. R. S. <i>London.</i>
1858 July 6.	B. H. Hodgson. <i>Europe.</i>
1860 Mar. 7.	Professor Max Müller. <i>Oxford.</i>
1860 Nov. 7.	Edward Thomas, F. R. S. <i>London.</i>
1860 Nov. 7.	Dr. Aloys Sprenger. <i>Heidelberg.</i>
1860 Nov. 7.	Dr. Albrecht Weber. <i>Berlin.</i>
1868 Feb. 5.	General A. Cunningham, C. S. I. <i>India.</i>
1868 Feb. 5.	Professor Bápu Deva Sástri. <i>Benares.</i>
1868 Sept. 2.	A. Grote. <i>London.</i>
1872 May 1.	Sir G. B. Airy, K. C. B., M. A., D. C. L., LL. D., F. R. S. <i>London.</i>
1872 June 5.	Prof. T. H. Huxley, LL. D., PH. D., F. R. S., F. G. S., F. Z. S. F. L. S. <i>London.</i>
1875 Nov. 3.	Dr. O. Böhtlingk. <i>Jena.</i>
1875 Nov. 3.	Prof. J. O. Westwood. <i>Oxford.</i>
1876 April 5.	Col. H. Yule, R. E., C. B. <i>London.</i>
1876 April 5.	Dr. Werner Siemens. <i>Berlin.</i>
1879 June 4.	Prof. E. B. Cowell, D. C. L. <i>Cambridge.</i>
1879 June 4.	Dr. A. Günther, V. P. R. S. <i>London.</i>
1879 June 4.	Dr. J. Janssen. <i>Paris.</i>
1870 June 4.	Prof. H. Milne-Edwards. <i>Paris.</i>
1879 June 4.	Prof. P. Regnaud. <i>Lyons.</i>
1879 June 4.	E. Renan. <i>Paris.</i>
1881 Dec. 7.	Professor Hermann L. F. Helmholtz. <i>Berlin.</i>
1881 Dec. 7.	Dr. Rudolph v. Roth. <i>Tübingen.</i>
1881 Dec. 7.	Sir William Thomson, Knt., LL. D., F. R. S., F. R. S. E. <i>Glasgow.</i>
1881 Dec. 7.	Professor William Wright, LL. D. <i>Cambridge.</i>
1883 Feb. 7.	W. T. Blanford, A. R. S. M., F. R. S., F. G. S., F. R. G. S. <i>London.</i>
1883 Feb. 7.	Alfred Russell Wallace, F. L. S., F. R. G. S. <i>Godalming.</i>
1883 Feb. 7.	Prof. William Dwight Whitney. <i>Newhaven, Connecticut,</i> U. S.

CORRESPONDING MEMBERS.

Date of Election.		
1844 Oct. 2.		Macgowan, Dr. J. <i>Europe.</i>
1856 July 2.		Krämer, A. von. <i>Alexandria.</i>
1856 , 2.		Porter, Rev. J. <i>Damsacus.</i>
1856 , 2.		Smith, Dr. E. <i>Beyrouth.</i>
1856 , 2.		Taylor, J., Esq. <i>Bussorah.</i>
1857 Mar. 4.		Nietner, J., Esq. <i>Ceylon.</i>
1858 , 3.		Schlagintweit, R. von. <i>Giessen.</i>
1859 Nov. 2.		Frederick, Dr. H. <i>Batavia.</i>
1860 Feb. 1.		Baker, The Rev. H. <i>E. Malabar.</i>
1861 July 3.		Gösche, Dr. R.
1862 Mar. 3.		Murray, A., Esq. <i>London.</i>
1863 July 4.		Barnes, R. H., Esq. <i>Ceylon.</i>
1866 May 7.		Schlagintweit, Prof. E. von. <i>Berlin.</i>
1868 , 5.		Holmboë, Prof. <i>Christian.</i>

ASSOCIATE MEMBERS.

1865 May 3.	Dall, Rev. C. H. <i>Calcutta.</i>
1874 Feb. 4.	Schaumburgh, J., Esq. <i>Calcutta.</i>
1874 April 1.	Lafont, Rev. Fr. E., s. j., c. i. e. <i>Calcutta.</i>
1884 Aug. 6.	Moore, F. F. R. S., F. L. S. <i>London.</i>
1875 Dec. 1.	Bate, Rev. J. D. <i>Allahabad.</i>
1875 , 1.	Maulaví Abdul Hai, Madrasah. <i>Calcutta.</i>
1882 June 7.	Giles, Herbert, Esq. <i>Europe.</i>
1883 Feb. 7.	Rodgers, C. J. <i>Amritsar.</i>
1885 Dec. 2.	Dr. A. Führer. <i>Lucknow.</i>

LIST OF MEMBERS WHO HAVE BEEN ABSENT FROM INDIA
THREE YEARS AND UPWARDS.*

* Rule 40.—After the lapse of 3 years from the date of a Member leaving India, if no intimation of his wishes shall in the interval have been received by the Society, his name shall be removed from the List of Members.

The following Members will be removed from the next Member List of the Society under the operation of the above Rule :

The Hon'ble Sir Robert Eyles Egerton, C. S., K. C. S. I.
W. G. Jackson, Esq., C. S.
F. H. Pellew, Esq., C. S.

LOSS OF MEMBERS DURING 1884.

BY RETIREMENT.

E. H. Man, Esq.
 Rev. K. M. Banerjea.
 Rai Sohun Lall.
 Col. E. J. Macnair.
 E. V. Westmacott.
 W. H. R. Merk.
 Maulaví Fath Ali.
 J. F. K. Hewitt, Esq.
 J. Copley Moyle, Esq.
 R. Logan, Esq.
 G. S. Leonard, Esq.
 Col. S. T. Trevor.
 W. Lawrence, Esq.
 A. Thomson, Esq.
 A. Weekes, Esq.
 Babu Benod Behary Mullick.

BY DEATH.

Ordinary Members.

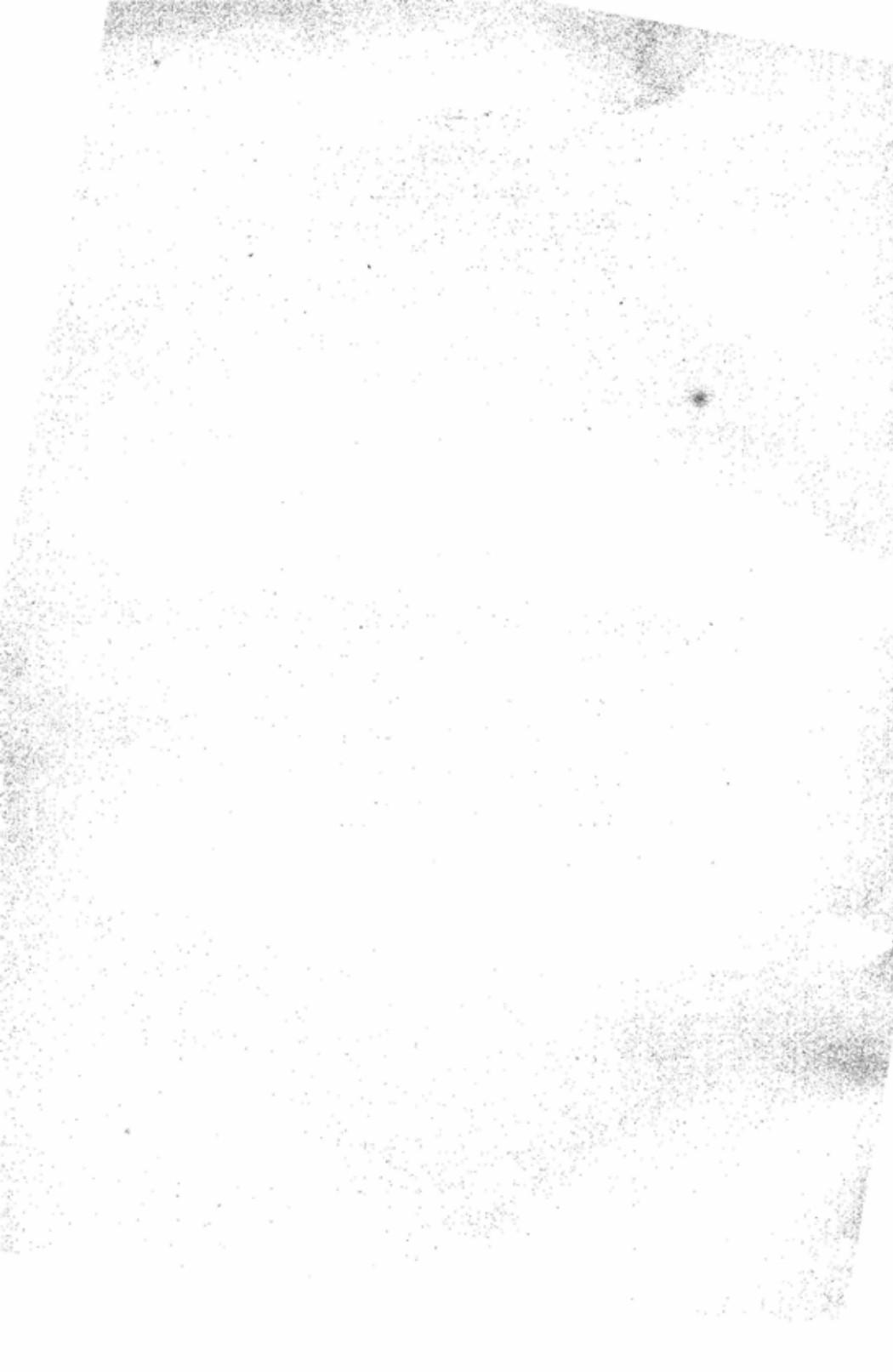
Babu Adharlall Sen.
 Rájá Satyanand Ghoshál.
 J. F. Browne, Esq., c. s.

BY REMOVAL.

Under Rule 40.

G. W. Allen, Esq., c. i. e.
 T. E. Ravenshaw, Esq., c. s.





[APPENDIX.]

ABSTRACT STATEMENT
OF
RECEIPTS AND DISBURSEMENTS
OF THE
ASIATIC SOCIETY OF BENGAL
FOR
THE YEAR 1885.

STATEMENT
Asiatic Society

Dr.

To ESTABLISHMENT.

Salaries	...	...	...	Rs.	3,819	0	8
Commission	...	...	...		342	12	11
Pension	...	...	...		8	0	0
					<hr/>	<hr/>	<hr/>
					4,169	13	7

To CONTINGENCIES.

Stationery	...	...	...	...	216	13	6
Lighting	...	...	...	...	84	8	0
Building	...	...	...	...	19	0	0
Taxes	...	...	...	...	720	0	0
Postage	...	...	...	...	709	9	0
Freight	...	...	...	...	22	4	0
Meetings	...	...	...	...	91	0	0
Miscellaneous	...	...	...	...	159	0	3
					<hr/>	<hr/>	<hr/>
					2,022	2	9

To LIBRARY AND COLLECTIONS.

Books	...	...	...	...	96	13	9
Local Periodicals	...	...	...	...	39	6	0
Binding	...	...	...	...	568	10	0
Bonus to the late Asst. Secretary for Library Catalogue					600	0	0
					<hr/>	<hr/>	<hr/>
					1,304	13	9

To PUBLICATIONS.

Centenary Review	...	...	...	...	2,483	6	0
Journal, Part I	...	...	...	...	2,324	6	3
Journal, Part II	...	...	...	...	1,773	15	4
Proceedings	...	...	...	...	1,299	4	3
					<hr/>	<hr/>	<hr/>
					7,880	15	10

To Printing charges of circulars, receipts, forms, &c.	123	10	0	15,501	7	11
To PERSONAL ACCOUNTS (Writes off and Miscellaneous)	...			1,108	12	5
To Balance	...	...	...	1,42,583	15	10
Total Rs. ...	1,59,194	4	2			

NO. 1.

of Bengal.

Cr.

By Balance from last Report	Rs. 1,42,957	9	5
--------------------------------	-----	-----	--------------	---	---

BY CASH RECEIPTS.

Publications sold for Cash	...	...	Rs.	98	0	0
Interest on Investments	...	...	..	6,165	8	0
Advances recovered	...	...	..	8	9	0
Miscellaneous	...	...	..	48	1	9

... 6,320	2	9
-----------	---	---

BY PERSONAL ACCOUNT.

Admission fees	...	..	...	976	0	0
Subscriptions	8,459	0	0
Sales on credit	370	0	0
Miscellaneous	111	8	0

... 9,916	8	0
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Total Income	16,236	10	9
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Total Rs. ...	1,59,194	4	2
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F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.

BROWNE & LOVELOCK,
Chartered Accountants.

STATEMENT
Oriental Publication Fund in Account

Dr.

To CASH EXPENDITURE.

Printing charges ...	...	...	Rs.	8,832	8	0
Editing charges ...	...	...		3,719	8	0
Salaries ...	...	...		1,094	5	4
Advertizing ...	...	...		120	0	0
Binding ...	...	...		4	0	0
Freight ...	...	...		23	0	0
Stationery ...	...	...		19	13	0
Postage ...	...	...		587	13	0
Contingencies ...	...	...		19	5	6
Commission on collecting bills ...	...	...		29	11	3

18,949 11 1

To PERSONAL ACCOUNT (Writes off and Miscellaneous) ... 48 12 0

Total Expenditure	.....	18,998	7	1
To Balance ...	.....	20,071	6	7

Total Rs. ...	.....	34,069	13	8
			

NO. 2.

with the Asiatic Society of Bengal.

Cr.

By Balance from last Report...	Rs. 21,408 13 8
--------------------------------	-----	-----	-----------------

BY CASH RECEIPTS.

Government allowances	...	...	Rs. 9,000 0 0
Publications sold for Cash	...	...	811 15 3
Advances recovered	...	...	88 15 0
Interest on Investments	...	...	824 0 0
			<hr/>
			10,674 14 3

BY PERSONAL ACCOUNT.

Sales on credit	...	...	1,953 10 9
Miscellaneous	...	...	32 7 0
			<hr/>
			1,986 1 9
			<hr/>
Total Rs. ...			12,661 0 0
			<hr/>
Total Rs. ...			34,069 13 8

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.

BROWNE, & LOVELOCK,
Chartered Accountants.

STATEMENT
Sanskrit Manuscript Fund in Account

Dr.

To Balance from last Report....	Rs.	180	10	6
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To CASH EXPENDITURE.

Salaries	Rs.,	1,328	8	0
Travelling expenses		86	3	0
Printing		513	2	0
Postage	...	...		0	14	0
Commission	...	...		4	12	0
Contingencies	...	...		8	3	6
			Total Expenditure	1,941 10 6		
			To Balance ...	.....	1,120	11 0
				Total Rs. ...	.....	3,248 0 0

NO. 3.

with the Asiatic Society of Bengal.

Cr.

By CASH RECEIPTS.

Government allowances	...	...	Rs.	3,200	0	0
Publications sold for Cash	...	...		8	0	0
Interest on Investments	...	...		12	0	0
				3,220	0	0
				—	—	—

By PERSONAL ACCOUNT.

Publications sold on credit	...	...	...	23	0	0
			Total Income	—	—	3,243 0 0
				—	—	—
			Total Rs. ...	—	—	3,243 0 0
				—	—	—

F. W. PETERSON,

*Honorary Secretary and Treasurer,
Asiatic Society of Bengal.*

Audited.

BROWNE & LOVELOCK,

Chartered Accountants.

STATEMENT
Personal

Dr.

To Balance from last Report	Rs. 3,836	0	8
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To CASH EXPENDITURE.

Advances for purchase of Sanskrit MSS., postage of Books

to Members, &c. ...	...	...	Rs. 458	3	3
To Asiatic Society ...	...	...	9,916	8	0
To Oriental Publication Fund ...	...	...	1,986	1	9
To Sanskrit Manuscript Fund ...	...	...	23	0	0
					12,383	13	0

Total Rs. ... 16,219 13 8

NO. 4.

Account.

Cr.

By Cash receipts	...	...	...	Rs. 10,978	3	6
By Asiatic Society	1,108	12
By Oriental Publication Fund	48	12
						0

						12,185	11	11
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By Balances.	Due to the Society.			Due by the Society.		
Members	3,773	12	9	167	3	4
Subscribers to publications	65	1	6	24	10	0
Employees	180	0	0	250	0	0
Agents	395	8	10	...	...	...
Miscellaneous... ...	306	4	6	194	12	6
	4,720	11	7	636	9	10
						4,084
						1
						9

Total Rs. 16,219 13 8

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.
 BROWNE & LOVELOCK,
Chartered Accountants.

STATEMENT
Invest

Dr.

		Nominal.	Actual.
To Balance from last Report	...	Rs. 1,58,800	0 0 1,58,279 12 9
To Cash	...	... 1,000	0 0 991 8 11
Total Rs.	...	<hr/> 1,59,800	<hr/> 0 0 1,59,271 5 8

STATEMENT
Trust

Dr.

To Servants' Pension	...	...	...	Rs. 14 13 6
To Balance (Servants' Pension Fund)	...	...	...	... 1,031 3 10
Total Rs.	...			<hr/> 1,046 1 4

NO. 5.

ments.

Cr.

		Nominal.	Actual.
By Balance	... ... ...	Rs. 1,59,800 0 0	1,59,271 5 8
		Total Rs. ... 1,59,800 0 0	1,59,271 5 8

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.

BROWNE & LOVELOCK,
Chartered Accountants.

NO. 6.

Funds.

Cr.

By Balance from last Report	... ... ...	Rs. 1,006 1 4
By Interest on Investments	... ... ...	... 40 0 0
		Total Rs. ... 1,046 1 4

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.

BROWNE & LOVELOCK,
Chartered Accountants.

STATEMENT
Cash.

Dr.

To Balance from last Report	Rs.	3,076	0	6
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RECEIPTS.

To Asiatic Society	Rs.	6,820	2	9	
To Oriental Publication Fund	10,674	14	3	
To Sanskrit Manuscript Fund	...	...	...	...	3,220	0	0
To Personal Account	...	...	...	...	10,978	3	6
To Trust Funds	...	...	...	...	40	0	0
				Total Rs.	...	34,309	5	0

STATEMENT
Balance

Dr.

To Cash	...	...	...	Rs.	1,451	13	10
To Personal Account	...	...	...	...	4,084	1	9
To Investments	...	...	...	...	1,59,271	5	8
				Total Rs.	...	1,64,807	5	3

NO. 7.

Cr.

EXPENDITURE.

By Asiatic Society ...	...	...	...	Rs. 15,501 7 11
By Oriental Publication Fund	...	...	...	13,949 11 1
By Sanskrit Manuscript Fund	...	...	...	1,941 10 6
By Personal Account ...	...	...	...	458 3 3
By Investments ...	...	...	...	991 8 11
By Trust Funds ...	...	...	...	14 18 6
		By Balance	...	1,451 13 10
			Total Rs. ...	34,309 5 0

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.

BROWNE & LOVELOCK,
Chartered Accountants.

NO. 8.

Sheet.

Cr.

By Asiatic Society ...	...	...	...	Rs. 1,42,583 15 10
By Oriental Publication Fund	...	...	...	20,071 6 7
By Sanskrit Manuscript Fund	...	...	...	1,120 11 0
By Trust Funds ...	...	...	...	1,081 3 10
			Total Rs. ...	1,64,807 5 3

F. W. PETERSON,
Honorary Secretary and Treasurer,
Asiatic Society of Bengal.

Audited.

BROWNE & LOVELOCK,
Chartered Accountants.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JANUARY, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 6th January, 1886, at 9 p. m.

D. WALDIE, Esq., F. C. S., vice-President, in the Chair.

The minutes of the last meeting were read and confirmed.

Nine presentations were announced, as detailed in the appended Library List.

The following gentlemen, proposed and seconded at the last meeting, were ballotted for and elected Ordinary Members of the Society :

1. A. R. Elson, Esq.
2. Col. W. B. Thomson, B. S. C.
3. Francis Carnac Barnes, Esq.
4. Saiyad Mohamad Latif Khán, Khan Bahadur.

Messrs. J. M. Douie and C. W. Marshall have intimated their wish to withdraw from the Society.

The CHAIRMAN announced that in accordance with Rule 38 of the Society's Bye-Laws, the names of the following gentlemen had been posted up as defaulting members since the last monthly general meeting, and will now be removed from the Member List, and that the fact will be published in the Proceedings.

1. T. Blissett, Esq.
2. Babu Bhairub Chunder Chatterji.
3. Capt. L. A. C. Cook.
4. Babu Sib Chunder Nag.
5. Babu Protap Narain Sing.
6. J. C. Rees, Esq.
7. G. R. C. Williams, Esq.

The PHILOLOGICAL SECRETARY read Reports on 4 finds of ancient coins, *viz.* :—

I. Report on 15 old silver coins forwarded by the Deputy Commissioner of Jhelam district with his No. 379, Rev. Dept., dated 6th June 1885.

1. The find-place is not stated. It is desirable, as a rule, to supply this information. The coins number 15 and are all silver Rupees.

2. The coins are all of Moghul Sultáns of Delhi, though their names are not quite correctly given in the forwarding letter. They should be as follows :

	No. of Specimens.
1, V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627— 1658 ; with illegible date (a bad specimen)	1
2, VI, <i>Aurangzíb</i> , A. H. 1068—1118 = A. D. 1658—1707 ; a, mint Dár us Saltánat Láhor, dates 1093, reign 31, 1117, reign [4]9 ; 1071, reign (?)	3
b, " Dár ul Khiláfát Sháh Jehánábád, (<i>i. e.</i> , Delhi), date 1091 (?) (bad specimens).....	2
c, " Súrat, date 1094, reign (?), date (?), reign 37 (bad)	2
3, VIII, <i>Bahádur Sháh</i> (<i>Sháh Alam</i>), A. H. 1118—1124 = A. D. 1707—1712 ; mint Akbarábád, date illegible, reign 1.....	1
4, X, <i>Farrokh Sir</i> , A. H. 1124—1131 = A. D. 1712— 1719 ; mint Dár ul Khiláfát Sháh Jehánábád, (<i>i. e.</i> , Delhi), date illegible, reign 2	1
5, XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748 ; a, mint Mustaqir ul Khiláfát Akbarábád, (<i>i. e.</i> , Agra), dates 1143, reign 12, and 11[48], reign 17	2
b, " Dár us Saltánat Láhor, dates 115[7], reign 26, 11[37], reign 6.....	2
c, " Murshidábád, date [1133], reign 2	1
Total... 15	—

3. The intrinsic value is about 15 annás each; the numismatic value is not more, as the coins, are in a rather indifferent condition.

II. Report on 13 silver coins forwarded by the Collector of Bhagulpur with his No. 531, G, dated 1st June 1885.

1. The find-place is not stated. The coins number 13,—not 9, as stated in the forwarding letter.
 2. They are Rupees of the following Moghul Emperors of Delhi:—

	No. of Specimens.
1, XIV, <i>Ahmed Sháh Bahádúr</i> , A. H. 1161—1167 = A. D. 1748—1754; mint Azímábád; date 1166, reign 6 (triplicates).....	3
2, XV, <i>Alamgír Záni</i> , A. H. 1167—1175 = A. D. 1754 —1761; mint Azímábád; dates 1167, 1—1172, 6 (duplicate)—1173, 6.	4
3, XVI, <i>Alam Sháh</i> , A. H. 1172 = A. D. 1758; a, mint: Azímábád (Patna), dates 1183, 11— 1177, 5—[1181], 9	3
b, mint Murshidábád, dates 1184, 11 (triplicate)....	3
	<hr/> Total... 13
	<hr/>

III. Report on 15 silver coins forwarded by the Secretary to Government North West Province and Oudh with his No. $\frac{2372}{+492}$ dated Nainital, 1st June 1885.

1. The find-place is not stated. They number 15, and are all silver Rupees.

2. The coins are stated to be "struck at Benárás in the name of Sháh Alam." This, however, is not correct, as will be seen from the following list of Sultáns and mints they are all Moghul coins :

	No. of Specimens.
1, VI, <i>Aurangzib Alamgír</i> , A. H. 1068—1118 = A. D. 1658—1707;	
a, mint Súrat, date 1107, reign 39 (Marsden DCCXCXCVII)	1
b, „ Etáwah, date 1117, reign 49 (Marsden DCCXCXCV)	1
c, „ Dár ul Khiláfát Sháh Jehánábád, (i. e., Delhi), date 1107, reign 40	1
d, „ Mustaqir ul Khiláfát Akbarábád (i. e., Agra), date 1113, reign 46	1

2, VIII, Bahádúr Sháh, A. H. 1118—1124 = A. D. 1707—1712;		
a, ,, Khujastah Bunyád, (i. e., Aurangábád), date 1121, reign 3	1	
b, ,, Etáwah, date 1121, reign 3	1	
3, X, Farrokh Sír, A. H. 1124—1131 = A. D. 1712—1719;		
a, mint Dár ul Khiláfat Sháh Jehánábád, (i. e., Delhi), date 1129, 6 and 1130, 7 (duplicate)	3	
b, ,, Súrat, date 1127, reign 4	1	
c, ,, Golkardah (?), date (?), reign 2	1	
4, XIII, Muḥammad Sháh, A. H. 1131—1161 = A. D. 1719—1748;		
a, mint Gwáliar, date 1135, reign 5, and 1137, reign 7	2	
b, ,, Fatehpur, date 113[1], reign 1	1	
c, ,, Korah, ,, 1137, ,, 7	1	
		Total... 15

3. The intrinsic value is about one Rupee, the numismatic, from Re. 1 to Rs. 1·8 according to the age.

IV. Report on 20 old coins and 2 rings, forwarded by the Subdivisional Officer of Sásserám, with his No. 1078, dated 29th October, 1885, and his No. 896, dated 17th September, 1885.

1. The find-place is stated to be the "Subdivision of Sásserám."

2. The coins are all of impure gold; 19 are in fairly good condition for such coins, but one appears to have been melted and now forms a mere unrecognizable lump. They belong to Rájá Govinda Chandra Deva of the (so-called) Rahṭor house of Kanauj, who reigned from about 1120—1144 A. D.

3. The two rings are of silver; one of them is split, the other is broken into two pieces. They are both quite plain, with the exception of a rude ornamentation, somewhat resembling a centipede extending over about one-third of the circle. They have no artistic value whatsoever.

4. On the obverse, the coins show a very rude figure, in outline, half-length, of some divinity (probably Lakshmí). The reverse bears an inscription in a slightly older form of Nágari which runs as follows: *Sri Mad-Govinda Chandra Deva.*

5. As the inscription is not equally perfect on the several coins, it will be best to allow each institution named in the Resolution of the

Government of India, to receive two coins, so selected as to make up, between them, the inscription as perfect as possible.

6. There will remain for sale by the mint 4 specimens, including the melted lump. Their intrinsic value is about Rs. 5 ; their numismatic, about Rs. 8.

7. The two rings may be given to the Indian Museum in Calcutta.

Read the following Circular from the Société de Physique et d'Histoire Naturelle de Genève, offering for competition a prize of 500 francs, for the best monograph of a genus or a family of plants, to be written either in Latin, French, German, English or Italian :—

PRIX

Fondé par Augustin-Pyramus de CANDOLLE pour la meilleure monographie d'un genre ou d'une famille de plantes.

Un concours est ouvert par la Société de physique et d'histoire naturelle de Genève pour la meilleure monographie inédite d'un genre ou d'une famille de plantes.

Les manuscrits peuvent être rédigés en latin, français, allemand (écrit en lettres latines), anglais ou italien. Ils doivent être adressés, franco, avant le 1^{er} octobre 1889, à M. le président de la Société de physique et d'histoire naturelle de Genève, à l'Athénée, Genève (Suisse).

Les membres de la Société ne sont pas admis à concourir.

Le prix est de 500 francs.

Il peut être réduit ou n'être pas adjugé dans le cas de travaux insuffisants ou qui ne répondraient pas aux conditions du présent avis.

La Société espère pouvoir accorder une place au travail couronné, dans la collection de ses *Mémoires* in-4°, si ce mode de publication est agréable à l'auteur.

Genève, juillet, 1885.

The following papers were read :

1. *The Hive-Bees indigenous to India and the introduction of the Italian Bee.*—By J. C. DOUGLAS, Esq.

(Abstract.)

In this paper, Mr. Douglas gives an interesting account of a series of laborious experiments made by him for a number of years to hive the indigenous bee (*Apis indica*). The paper contains a description of the several species which he used for his experiments, and the results which he arrived at, which latter were not uniformly successful. He also gives an account of the attempts which he made for the introduction and acclimatisation of the Italian bee.

The paper will be published in full in Journal, Part II of 1886.

2. *On a Uredine affecting the Himalayan Spruce-fir, Abies smithiana.*—*By DR. A. BARCLAY.*

(Abstract.)

In this paper Dr. Barclay gives an account of a conspicuous parasite by which many fir trees in the Western Himalayas are attacked. It occurs in great abundance throughout the forests of the Sutlej valley at elevations of from 7000 to 10,000 feet. The author has no data by which to limit the season during which the parasite is outwardly recognisable. He met with it throughout May, and he believes that it disappears entirely during the rains in July. He met with the parasite in two forms, which for convenience, he describes as the *aecidial* and *uredinal*, but whether they do really stand in this relationship to each other, he has no experimental evidence to determine, though from other circumstances such a relationship appears probable. Detailed particulars of those two forms of affection are given in this paper which will be published in full in Journal Part II for 1886.

LIBRARY.

The following additions have been made to the Library since the Meeting held in December last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII, No. 3, October, 1885.

_____. _____. Circulars, Vols. IV, No. 42; V, Nos. 43 and 44.

_____. _____. Studies from the Biological Laboratory, Vol. III, No. 4.

Batavia. Observations made at the Magnetical and Meteorological Observatory, Vol. VI, Part 2.

Berlin. K. Akademie der Wissenschaften,—Abhandlungen, 1884.

Birmingham. Philosophical Society,—Proceedings, Vol. IV, Part 2.

Brussels. Société Malacologique,—Annales, Vol. XV, No. 1.

_____. Société Royale Malacologique,—Annales, Vol. XIX.

_____. Procès-Verbaux des Séances, Vol. XIV.

Buenos Aires. Academia Nacional de Ciencias,—Actas, Vol. V, Nos. 1 and 2.

- Calcutta. Geological Survey of India,—Memoirs, *Palæontologia Indica*, Ser. XIV, Vol. I, No. 5.
- _____. Indian Medical Gazette,—Vol. XX, No. 12, December, 1885.
- _____. Original Meteorological Observations, June to August, 1885.
- Florence. *Archivio per L'Antropologia e la Etnologia*,—Vol. XV, No. 2.
- _____. Società Africana D'Italia,—*Bullettino*, Vol. I, No. 5.
- Havre. Société de Géographie Commerciale,—*Bulletin*, No. 4, 1885.
- Helsingfors. *Societatis Scientiarum Fennicæ Acta*, Vol. XIV.
- _____. _____. *Bidrag*, Nos. 39—42.
- _____. _____. *Översigt, Förhandlingar*, Vol. XXVI.
- Lahore. *Anjuman-i-Punjab*,—*Journal*, Vol. V, Nos. 47—51.
- Leipzig. Deutsche Morgenländische Gesellschaft,—*Zeitschrift*, Vol. XXXIX, No. 3.
- London. Academy,—Nos. 706—710.
- _____. Atheneum,—Nos. 3029—3033.
- _____. Nature,—Vol. XXXIII, Nos. 837—841 and Index to Vol. XXXII.
- Moscow. Société Impériale des Naturalistes,—*Bulletin*, No. 4, 1883; Nos. 1—3, 1884.
- _____. _____. *Nouveaux Mémoires*, Vol. XV, No. 1.
- Paris. Annales de Chimie et de Physique,—Index to Vols. I—XXX.
- _____. Société de Géographie,—*Compte Rendu des Séances*, Nos. 16—18, 1885.
- Philadelphia. Academy of Natural Sciences,—*Proceedings*, Part 2, 1885.
- _____. American Philosophical Society,—*Proceedings*, Vols. XXI, No. 116; XXII, Nos. 117—119.
- _____. _____. Register of papers published in the Transactions and Proceedings.
- Pisa. Società Toscana di Scienze Naturali,—*Atti*, Vol. VI, No. 2.
- Rome. Società Degli spettroscopisti Italiani,—*Memorie*, Vol. XIV, No. 9, September, 1885.
- Roorkee. Professional papers on Indian Engineering,—Vol. III (3rd Series), No. 11, November, 1885.
- Schaffhausen. Société Entomologique Suisse,—*Bulletin*, Vol. VII, Nos. 2—4.
- St. Petersburg. Academie Impériale des Sciences,—*Bulletin*, Vols. XXIX, No. 4; XXX, No. 1.
- _____. _____. *Mémoires*, Vol. XXXIII, No. 13.
- _____. Comité Géologique,—*Mémoires*, Vols. I, No. 4; II, No. 2; III, No. 1.
- _____. _____. *Proceedings*, Vol. VI, Nos. 6 and 7.

- St. Petersburg. Russian Geographical Society,—Proceedings, Vol. XXI, Nos. 4 and 5.
- Vienna. Anthropologische Gesellschaft,—Mittheilungen, Vol. XIV, Nos. 2—4.
- . K. K. Zoologisch-botanische Gesellschaft,—Personen, Ort und Sach-Register, 1871-1880.
- . Verhandlungen, Vol. XXXIV.
- Washington. United States Geological Survey,—Bulletin, Nos. 2—6.
- Yokohama. Asiatic Society of Japan,—Transactions, Vol. XIII, Part 2.
- Zagreb. Arkeologickoga Druztva,—Viestnik, Vol. VII, No. 4.

MISCELLANEOUS PRESENTATIONS.

Report on the Australian Museum, New South Wales for 1885. Fcp. Sydney, 1885.

AUSTRALIAN MUSEUM.

Report on the Administration of the Central Provinces for the year 1884-85. Fcp. Nagpur, 1885.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Existing Land Laws of the United States. 8vo. Washington, 1884.

Land Laws of the United States, Local and Temporary. 8vo. Washington, 1884.

The Public Domain. Its History, with Statistics. 8vo. Washington, 1884.

DEPARTMENT OF THE INTERIOR, UNITED STATES.

Bihar Peasant Life, being a Discursive Catalogue of the surroundings of the people of that Province. 8vo. Calcutta, 1885.

Report of the Administration of the Customs Department in the Bengal Presidency for the official year 1884-85. Fcp. Calcutta, 1885.

Returns of the Rail Borne Traffic of Bengal for the quarter ending 30th June, 1885. Fcp. Calcutta, 1885.

The Flora of British India, Vol. IV, by Sir J. D. Hooker. 8vo. London, 1885.

GOVERNMENT OF BENGAL.

A Compendium of the Castes and Tribes found in India, by E. J. Kitts, B. C. S. Fcp. Bombay, 1885.

Ancient India, as described by Ptolemy, by J. W. McCrindle. 8vo. Bombay, 1885.

GOVERNMENT OF BOMBAY.

Report on the Government Botanical Gardens of Saharanpur and Mussoorie. Fcp. Allahabad, 1885.

GOVERNMENT OF NORTH WEST PROVINCES.

Correspondence between the Government of India and the Secretary of State for India, relating to the age at which Candidates for the Civil Service of India are admitted for competition in England. Fcp. London, 1885.

Statement exhibiting the Moral and Material Progress and condition of India during the year 1882-83. Fcp. London, 1885.

Statistical Abstract relating to British India from 1874-75 to 1883-84. No. 19. 8vo. London, 1885.

INDIA OFFICE, LONDON.

International Meteorological Observations, September, 1884. 4to. Washington, 1885.

Monthly Weather Review, September, 1885. 4to. Washington, 1885.

METEOR. REPORTER TO THE GOVT. OF INDIA.

Historical Sketch of Geological Explorations in Pennsylvania and other States, by J. P. Lesley. 8vo. Harrisburg, 1876.

SECOND GEOLOGICAL SURVEY OF PENNSYLVANIA.

Tide Tables for the River Hooghly for 1886. Sheet, Calcutta, 1885.

Tide Tables for the River Hooghly for 1886. Signals, Lights, Port Rules, &c., &c. 8vo. Calcutta, 1885.

TIDAL OPERATIONS—SURVEY OF INDIA.

PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries,—Vol. III, No. 26, November, 1885.

Berlin. Deutsche Litteraturzeitung,—Vol. VI, Nos. 37 and 38.

Cassel. Botanisches Centralblatt,—Vol. XXIII, Nos. 10—12.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XIV, No. 11.

Göttingen. Gelehrte Anzeigen,—No. 18, 1885.

_____. Nachrichten,—No. 7, 1885.

Leipzig. Annalen der Physik und Chemie,—Vol. XXVI, No. 3.

_____. Beiblätter,—Vol. IX, Nos. 10 and 11.

_____. Hesperos,—Vol. IV, Nos. 99—105.

_____. Literarisches Centralblatt,—Nos. 38 and 39, 1885.

London. Chemical News,—Vol. LII, Nos. 1355—1359.

_____. Journal of Botany, Vol. XXIII, No. 275, November, 1885.

_____. Journal of Conchology,—Vol. IV, No. 12, October, 1885.

_____. Journal of Science,—Vol. VII (3rd Series), Nos. 143 and 144, November and December, 1885.

_____. Messenger of Mathematics,—Vol. XV, No. 4, August, 1885.

_____. Nineteenth Century,—Vol. XVIII, No. 106, December, 1885.

_____. Numismatic Society,—Anniversary address, June 18, 1885.

- London. Publishers' Circular,—Vol. XLVIII, Nos. 1156 and 1157.
—. Society of Arts,—Journal, Vols. XXXIII, No. 1721; XXXIV,
Nos. 1722—1725.
Paris. Académie des Sciences,—Comptes Rendus des Séances, Vol. CI,
Nos. 10 and 11.
—. Revue Critique,—Vol. XX, Nos. 37 and 38.
—. Revue des Deux Mondes,—Vol. LXXII, Nos. 2 and 3.
—. Revue Scientifique,—Vol. XXXVI, Nos. 11 and 12.
Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für
den Orient,—Vol. XI, No. 11.
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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR FEBRUARY, 1886.

The Annual Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd February, 1886, at 9 p. m.

DR. RÁJENDRALÁLA MITRA, C. I. E., President in the Chair.

According to the Bye-Laws of the Society, the President ordered the voting papers to be distributed for the election of Officers and Members of Council for 1886 ; and appointed Messrs. Gay and Wood-Mason, Scrutineers.

The PRESIDENT then called upon the Secretary to read the Annual Report.

ANNUAL REPORT FOR 1885.

The Council of the Asiatic Society of Bengal have the honor to submit the following Report on the state and progress of the Society's affairs during the past year.

Member List.

During the year under review 27 gentlemen were elected Ordinary Members of the Society, 16 Members withdrew, 3 died, 2 were removed from the List in accordance with Rule 37, and 2 in accordance with Rule 40 ; the result showing a net gain of 4 Members to the Society. The total number of Members, therefore, at the close of 1885 was 330 against 326 at the end of the preceding year. Of these, 105 are Resident, 161 Non-Resident, 13 Foreign, 16 Life, and 35 Non-Subscribing members, as will be seen from the following Table, which also shows the fluctuations in the number of Ordinary Members for the past 6 years.

Year.	PAYING.			NON-PAYING.			Grand Total.	
	Resident.	Non-Resident.	Foreign.	Total.	Life.	Absent.		
1880	112	185	15	312	14	30	44	356
1881	110	188	17	295	14	41	55	356
1882	101	155	18	274	15	48	63	337
1883	100	142	18	266	15	48	63	323
1884	102	157	12	271	15	40	55	326
1885	105	161	13	279	16	35	51	330

The 3 Ordinary Members who died during the year, were Babu Adharlal Sen, Mr. J. F. Browne and Rajah Satyanand Ghosal.

An Associate Member was elected during the year, Dr. A. Führer, in recognition of his contributions to Indian Antiquities and Archaeology.

During the year, one member, Mr. Henry Baden-Powell, compounded for his future subscriptions.

Indian Museum.

No transfers of presentations to the Society were made to the Indian Museum in 1885.

A vacancy in the office of Trustee having occurred by the election of Major J. Waterhouse as a Trustee on behalf of the Museum, Mr. H. F. Blanford was appointed to replace him as a Trustee on behalf of the Society.

Finance.

The accounts of the Asiatic Society are shown in the Appendix, under the usual heads.

Statement No. 8 contains the Balance Sheet of the Asiatic Society, as also of the different funds administered through it.

The Budget for the past year was estimated at the following figures : Receipts Rs. 15,100 ; Expenditure Rs. 14,378.

The Actuals were found to be: Receipts Rs. 14,213-8-6; Expenditure Rs. 15,501-7-11.

The Receipts thus show a decrease on the Budget Estimate of Rs. 886, and the Expenditure an increase of Rs. 1,123.

The falling off in the receipts is due to the small sum collected under the heading "Sale of Periodicals." Messrs. Trübner and Co., agents for the sale of our periodicals in London, sent in their accounts for 1884, but as there were some discrepancies discovered, they were returned for adjustment. These accounts have not as yet come back to us. It will be seen also that, on the Expenditure side, under the heading Books, an amount equal to the short receipts in the sale of periodicals, has been saved by the delay in settling Messrs. Trübner's accounts.

For the partial cost of printing and publishing the Centenary Review, Rs. 2,483-6-0 were paid last year. The payment of this large item has been the cause of the excess on the expenditure side.

During the years 1884-85 large sums have been paid for extraordinary charges. Thus, in 1884 the cost of repairing and white-washing the Asiatic Society's building amounted to Rs. 902-8-0. In the same year, the Catalogue of Books in the Society's Library required the payment of Rs. 1,383 plus a bonus of Rs. 600 to the compiler. The Centenary Review was printed and published at a charge to the Society of Rs. 3,424-14-3, and this sum was paid in the years 1884-85. The present year begins, therefore, free from the heavy burdens of the past. The income estimated is based on the returns of the past year, with this difference, however, that Messrs. Trübner and Co.'s accounts for 1884-85 are included under the heading "Sale of Periodicals."

On the expenditure side, the items "Salaries", "Commission" and "Books" show an increase compared with the past year. The higher sums budgetted for under the first head are due to the annual increments of pay, which the Assistant Secretary and his Assistant, as well as the Cashier, will receive; whilst under the second (Commission), by order of the Council, the rate of commission hitherto drawn by the Cashier on sales and collections has been doubled. The increase under the heading "Books" is required to adjust Messrs. Trübner and Co.'s accounts for two years.

The Budget Estimate for 1886 is as follows:—

RECEIPTS.	Rs.	A.	P.
Subscriptions,	...	7,500	0 0
Sale of Periodicals,	...	2,000	0 0
Interest on Investments,	...	6,200	0 3
Miscellaneous,	...	200	0 0
	15,900	0	0

EXPENDITURE.

		Rs.	A.	P.
Salaries,	...	4,000	0	0
Commission,	...	420	0	0
Stationery,	...	200	0	0
Lighting,	...	100	0	0
Building,	...	50	0	0
Taxes,	...	720	0	0
Postage,	...	700	0	0
Freight,	...	20	0	0
Meetings,	...	90	0	0
Contingencies,	...	150	0	0
Books,	...	3,000	0	0
Local Periodicals,	...	50	0	0
Binding,	...	500	0	0
Coins,	...	50	0	0
Journal, Part I,	...	2,100	0	0
" II,	...	2,100	0	0
Proceedings,	...	1,200	0	0
Printing of Circulars,	...	125	0	0
		15,575	0	0

London Agency.

The statement furnished by Messrs. Trübner and Co. of their account with the Society showed a Balance of £25-19-3½ in our favour.

The number of copies of parts of the Journal, Proceedings and Bibliotheca Indica sent to Messrs. Trübner and Co. for sale was 453, 360 and 1008, respectively.

The Sales of the Society's publications effected by them during the same period amounted to £92-5-4½ and of the Bibliotheca Indica to £36-7-6.

Fifteen Invoices of Books purchased and of publications of various Societies sent in exchange were received during the year 1885. The value of books purchased amounted to £124-7-6.

Library.

The total number of volumes or parts of volumes added to the Library in 1885 was 2,013, of which 843 were purchased and 1,170 presented.

Publications.

Four Nos. of the Journal, Part I, were published during the year, containing 182 pages of letter press and 8 plates; and three Nos. of Journal, Part II, containing 182 pages of letter press and 5 plates.

Ten Nos. of the Proceedings, containing 163 pages of letter press and 3 plates, were also published.

Building.

The expenditure on the building during the year was only Rs. 19. This was spent in the stoppage of leaks.

Coin Cabinet.

The additions during 1886 were not very large, numbering altogether 69 coins. They were all acquired under the Treasure Trove Act, *viz.*, 60 in the Bengal Presidency, 6 from the Bombay Presidency, and 3 from the Madras Presidency. Not a single coin was purchased. Of the 60 coins acquired under the Treasure Trove Act in the Bengal Presidency, 14 were of copper, 13 of mixed metal, 19 of silver and 14 of gold. Detailed descriptions of these 60 coins are given in the Society's Proceedings for August, November and December 1885.

The six coins presented by the Government of Bombay consist of: 1 silver coin of Alangir, 1 do. of Sháh Jehán, 2 do. of Aurangzib Alangir and 2 copper coins of Gujerat. Those from the Madras Government are: 1 Viraraya gold Fanam, 1 Nagari gold Fanam and 1 old Madras gold Pagoda.

Secretary's Office.

There is no change to report in the Secretary's Office.

Mr. J. Wood-Mason and Dr. A. F. R. Hoernle have continued to act as Natural History Secretary and Philological Secretary; Messrs. F. E. Pargiter and F. W. Peterson, as General Secretary and Honorary Treasurer. During short leaves taken by Dr. Hoernle and Mr. Pargiter, Mr. J. Beames and Lt.-Col. Waterhouse officiated for them respectively.

In the beginning of the year, Mr. J. F. Duplessis was appointed Assistant Secretary, vice Mr. W. A. Bion, resigned.

Mr. J. H. Elliott has continued to hold the post of Assistant Librarian, Babu Nritya Gopal Basu that of Cashier and Babu Amritalal Dass that of Copyist.

Bibliotheca Indica.

Thirty-nine fasciculi were published during the year: ten in the Arabic-Persian Series and twenty-nine in the Sanskrit Series. They belong to nineteen different works, of which four are in the Arabic-

Persian Series and fifteen in the Sanskrit Series. Among the former there is one new publication, *viz.*, the Zafarnámah and in the latter seven, *viz.*, the Sankháyana Srauta Sútra, the Kála Mádhava, the Viváda Ratnákara, the Manu Tiká Sangraha, the Nárada Smṛiti, the Kúrma Purána, and the Uvásagadasáo.

In the annual report of the preceding year (p. 25) it had been estimated that 40 fasciculi would be published in the course of the ensuing year. The actual outturn has only fallen short of that estimate by one. For the year 1886 the outturn may be reckoned at 48 fasciculi. These at the average rate of Rs. 432 for each, will cost Rs. 20,736. The average income being Rs. 12,799, there will be an excess of expenditure of Rs. 7,937, which will be amply covered by the unspent balance of Rs. 20,071.

A. Arabic-Persian Series.

1. Of the Isábah or the Biographical Dictionary of persons who knew Muḥammad, three fasciculi have been published by Maulví Abdul Hai, being the eighth of the second volume, and the seventh and eighth of the third volume. It carries the list of 'male witnesses' down to No. 9124 in the middle of Ayin (ءے) and No. 1899 in the middle of Mím (ڻ)، respectively.

2. Of the Akbarnámah, edited by Maulvi Abdur Rahím of the Calcutta Madrassa, four fasciculi have been published, continuing the history of Akbar down to the year 1004 A. H.

3. Of the annotated English Translation of the second volume of the Muntakhab-ut-Tawáríkh, by the Rev. W. H. Lowe of Cambridge, the third fasciculus was published during the past year.

4. Of the Zafarna'mah of Maulá Sharfuddín 'Alí Yazdí the forthcoming edition of which, by Maulvi Muḥammad Ilahdád, was announced in last year's annual report, two fasciculi have been issued.

B. Sanskrit Series.

5. The joint editors, Pandits Yogeśvara Smṛitiratna and Káman-khyánátha Tarkaratna, have advanced their edition of Hemádri's Chaturvarga Chintámáni by three fasciculi which belong to the first part of the Society's third volume, being the fifth part (or Pariśesha Khanḍa) of the work itself.

6. Pandit Satyavrata Sámaśramí has finished the second and commenced the third volume of his annotated edition of the well-known Nirukta glossary by the issue of five fasciculi.

7. Professor Dr. R. Garbe of Königsberg, likewise, has finished the second volume of his edition of the important Apastamba Srauta Sútra,

by the issue of three fasciculi. The continuation of this work will probably be interrupted for a time, during which fresh search will be made for further manuscripts of the commentary.

8. Of the PARIŚIHTA PARVAN or STHAVIRĀVALI CHARITRA by Hema-chandra, a Jain work in Sanskrit verse of the first twelve Sthaviras or Patriarchs, Professor Dr. H. Jacobi of Kiel, has published the third fasciculus.

9. Of the PARĀSĀRA SMRITI two fasciculi have been issued by Pandit Chandrakānta Tarkālankára.

10. The MIMĀMSĀ DARŚANA with Savara Svámin's commentary, has been continued by Pandit Maheśachandra Nyáyaratna, Principal of the Sanskrit College, who has published another fasciculus.

11. Of the TATTVA CHINTĀMANI, Pandit Kámakhýánátha Tarkaratna has published two fasciculi.

12. Dr. Réjendralála Mitra has advanced his edition of the VÁYU PURĀNA by two fasciculi.

The following are works, the publication of which was sanctioned by the Council in the course of the past year.

13. The KÚRMA PURĀNA, by Pandit Nílmani Mukerjea, Professor of Sanskrit in the Presidency College. The first fasciculus has been published.

14. The VIVÁDA RATNÍKARA, edited by Pandit Dína Nátha Vidyálankára, one of the Professors of the Sanskrit College. Two fasciculi have been published.

15. The KÁLA MÁDHAVA, edited by Pandit Chandrakānta Tarkālankára, a Professor of the Sanskrit College. Two fasciculi have been published.

16. The NÁRADA SMRITI, edited by Professor Dr. J. Jolly of Würzburg. One fasciculus has been published.

17. The same editor has commenced the MANU TÍKÁ SANGRAHA, being extracts from various old commentaries on Manu's law-book. The first fasciculus has been issued.

18. The SANKHÁTANA SRAUTA SÚTRA, edited by Professor Dr. A. Hillebrandt of Breslau. Two fasciculi have been published.

19. The UVÁSAGADASÁO, the seventh of the Jain Angas, in Prákrit, describing the rules of conduct of a Jain layman, by Dr. A. F. Rudolf Hoernle. The edition, of which the first fasciculus has been published, contains the Prákrit text, the Sanskrit commentary of Abhaya Deva, and an English Translation with notes.

The following works are in a more or less forward state of publication :

1. TABAQÁT-I-NÁSIRÍ (Index of persons and places).- 2. LALITA

VISTARA (English Translation). 3. PRÁKRITA LAKSHANA (English Translation and Notes). 4. PRITHIRÁJ RASAU (Text and Translation). 5. KÁTANTRA (Introduction). 6. BRÍHAD DEVATÁ (Text). 7. PRÁKRITÁ-DHYÁYA (Text and Translation). 8. CHARAKA (English Translation with notes). 9. NAQÁID (Text). 10. KATHÁ SARIT SÁGARA (Index of subjects and names). 11. SUŚRUTA SAMHITÁ (English Translation with Notes). 12. NYÁYA VÁRTIKA (Text). 13. COMMENTARIES of the Vedánta Sútra. 14. YOGINÍ TANTRÁ (Text). 15. KARANA GRANTHA (Text). 16. TÁRÍKH-I-YÁMINÍ (English Translation with notes). 17. ASHTA SAHASRIKA PRAJÑA PÁRAMITÁ (Text).

The editorship of the Text of the Prithi Ráj Rásau, having been resigned by Dr. Hoernle, on account of stress of work, has been transferred to Pandit Gopál Sarman, a Professor of the Jaynaraín's College in Benares.

The editor of the Suśruta, Dr. A. C. Dutt, having died, the Council of the Society is endeavouring to find another equally competent editor to continue the work which had been so ably commenced by the late Dr. Dutt.

The publication of the Lamiyyet el Arab, announced in the last annual report, has been cancelled at the suggestion of Mr. C. J. Lyall, who was to have edited it.

The undermentioned new works have been sanctioned for publication.

1. Sanskrit.

1. The JNÁTÁ DHARMAKATHÁ and the VIPÁKA SÚTRA, two of the Jain Angas, to be edited by Dr. A. F. Rudolf Hoernle. (See Proceedings, May 1885.)

2. The SADDHARMA PUNDARÍKA, a Buddhist history of Buddha, by the same editor.

3. The VARÁHA PURÁNA, to be edited by Pandit Hrishikesha Sás-trí of the Sanskrit College.

4. The SAT SAI of Tulsí Dás, by Pandit Bihári Lál Chaube.

5. JAYADATTA on ancient Hindú Veterinary art. By Bábú Umeś-chandra Gupta.

6. GADYA KUSUMÁNJALI, to be edited by Pandit Chandrakánta Tarkaratna, of the Sanskrit College.

2. Arabic and Persian.

7. AL TABRÍZI's commentary, to be edited by Mr. C. J. Lyall.

8. Tuzak i Jahángírf, to be edited by Rev. W. H. Lowe of Cambridge.

The following is a detailed List of Publications issued in 1886:—

Arabic-Persian Series.

1. *Iṣābah*, edited by Moulvi Abdul Hai of the Calcutta Madrasah, Nos. 250, 251, 252 (Old Series) fasc. XXVI, Vol. II, No. 8, and fasc. XXXVII, XXXVIII, Vol. III, Nos. 7, 8.
2. The *Akrarnāmaḥ*, by Abul Fazl-i-Mubarak-i-Allamī ; edited by Maulvi Abdur Rahím, Professor, Calcutta Madrasah ; Nos. 534, 535 552, 552A, Vol. III, Fasc. VI, VII.
3. *Muntaqhab-ut-Tawáriḵ*, by Abdul Qadir Bin Maluk Sháh, known as Al-Badaoni, translated from the original Persian, by W. H. Lowe, M. A., Hebrew Lecturer, Christ's College, Cambridge, No. 543, Fasc. III.
4. The *Zafarnāmaḥ*, by Mauláná Sharfuddin 'Ali Yazdi, edited by Maulvi Muhammad Ilahdád, late second Professor, Calcutta Madrasah, Nos. 533, 545, Fasc. I and II.

Sanskrit Series.

5. *Chaturvarga Chintámaṇi*, by Hemádri, edited by Pandits Yogeśachandra Smṛitiratna and Kámákhyaṇátha Tarkaratna, Nos. 527, 536, 548, Vol. III, Part I, Fasc. X, XI, XII.
6. *Nirukta*, with commentaries, edited by Pandit Satyavrata Sámaśramí ; Nos. 526, 538, Vol. II, Fasc. V, VI ; Nos. 539, 546, 554, Vol. III, Fasc. I, II, III.
7. *Apastamba Srauta Sótra*, belonging to the Black Yajur Veda, with the commentary of Rudradatta, edited by Dr. Richard Garbe, Professor of Sanskrit in the University of Königsberg, Nos. 531, 551, 560, Vol. II, Fasc. X, XI, XII.
8. *Shavirávali-Charitra* or *Pariśishtá Parvan*, being an appendix of the Trishasti Sataka Purusha Charitra, by Hemachandra, edited by Dr. Hermann Jacobi, Professor of Sanskrit and Comparative Philology in the University of Riel ; No. 537, Fasc. III.
9. *Parásara Smṛiti*, by Chandrakánta Tarkálankára, Nos. 529, 547, Fasc. III, IV.
10. *Mimáṃsa Darśana*, with the commentary of Savara Svámin ; edited by Maheśachandra Nyáyaratna, No. 541, Fasc. XVIII.
11. *Tattva Chintámaṇi*, edited by Pandit Kámákhyaṇátha Tarkaratna, Nos. 530, 544, Fasc. II, III.
12. *Váyu-Puráṇa*, a system of Hindú Mythology and Tradition ; edited by Dr. Rájendralála Mitra, C. I. E., Nos. 528, 553, Vol. II, Fasc. V, VI.
13. *Kúrma Puráṇa*, a System of Hindu Mythology and Tradition, edited by Pandit Nilmani Mukerjea, Professor in the Presidency College, No. 559, Fasc. I.

14. VIVÁDA RATNÁKARA, a digest of laws relating to jurisprudence ; edited by Pandit Dīnanātha Vidyálankára, Nos. 549, 550, Fasc. I, II.
15. The KÁLA MÁDHAVIYA of Mádhava Achárya, edited by Pandit Chandrakánta Tarkálankára, Nos. 540, 558, Fasc. I, II.
16. NÁRADA SMRITI, one of the standard authorities in Hindú Law ; edited by Dr. Julius Jolly, Professor of Sanskrit and Comparative Philology in the University of Würzburg, No. 542, Fasc. I.
17. MANU TÍKÁ SANGRAHA, or extracts from various Commentaries on Manu's Law Book ; also edited by Professor Jolly, No. 556, Fasc. I.
18. SANKHÁTANA SRAUTA SÚTRA, edited by Dr. Alfred Hillebrandt, Professor of Sanskrit and Comparative Philology in the University of Breslau, Nos. 532, 555, Vol. I, Fasc. I, II.
19. UVÁSAGADASÁO, the seventh Anga of the Jains, on the rules of conduct of Jain laymen ; edited by Dr. A. F. Rudolf Hoernle, No. 557, Fasc. I.

List of all Societies, Institutions, &c., to which the Publications of the Asiatic Society have been sent during the year, or from which Publications have been received.

* Societies, &c., which have received the Asiatic Society's publications, and have sent their publications in return.

† Societies, &c., which have received the Asiatic Society's publications, but have sent none in return.

§ Societies, &c., whose publications have been received, but to which nothing has been sent in return.

- * Allahabad :—Editor, Pioneer.
- § American Philological Association.
- * Amsterdam :—Royal Zoological Society.
- * Angers :—Société d' Etudes Scientifiques d' Angers.
- * Baltimore :—Johns Hopkins University.
- * Batavia :—Society of Arts and Sciences.
- § ——— :—Magnetic and Meteorological Observatory.
- * ——— :—Kon Natuurkundige Vereeniging in Nederlandsch-Indië.
- * Berlin :—Royal Academy of Sciences.
- § ——— :—Entomologischer Verein.
- † Berne :—Société Suisse d' Entomologie.
- § Birmingham :—Birmingham Philosophical Society.
- * Bombay :—Bombay Branch, Royal Asiatic Society.
- * ——— :—Editor, Indian Antiquary.
- * ——— :—Editor, Times of India.
- * Boston :—Natural History Society.

- * Bordeaux :—L' Académie Nationale des Sciences, Belles-Lettres et Arts.
- § ——— :—Société de Géographie Commerciale.
- * ——— :—Société Linnéenne.
- * Brisbane :—Royal Society of Queensland.
- * Brookville :—Society of Natural History.
- * Brunswick :—Verein für Naturwissenschaft.
- * Brussels :—L' Académie Royale des Sciences.
- * ——— :—Musée Royal d' Histoire Naturelle de Belgique.
- * ——— :—Société Entomologique de Belgique.
- * ——— :—Société Royale Malacologique de Belgique.
- § Buda Pest :—Royal Hungarian Academy of Sciences.
- * Buenos Ayres :—Public Museum.
- * ——— :—Academia Nacional de Ciencias de la Republica Argentina.
- * Calcutta :—Agri-Horticultural Society of India.
- * ——— :—Geological Survey of India.
- * ——— :—Editor, Englishman.
- * ——— :—Editor, Hindoo Patriot.
- * ——— :—Editor, Indian Daily News.
- * ——— :—Indian Mirror.
- * ——— :—Indian Museum.
- † ——— :—Mahomedan Literary Society.
- † ——— :—Public Library.
- * ——— :—Survey of India.
- * ——— :—Tuttabodhini Shova.
- † ——— :—University Library.
- † Cambridge :—University Library.
- * Cassel :—Der Verein für Naturkunde.
- * Cherbourg :—Société Nationale des Sciences Naturelles.
- * Christiania :—University Library.
- * Clinton :—Editor, American Antiquarian and Oriental Journal.
- * Colombo :—Ceylon Branch, Royal Asiatic Society.
- * Copenhagen :—La Société Royale des Antiquaires du Nord.
- † Cuttack :—Cuttack Library.
- * Dehra Dun :—Great Trigonometrical Survey.
- * Dublin :—Royal Dublin Society.
- * ——— :—Royal Irish Society.
- § ——— :—Geological Society of Dublin.
- * Edinburgh :—Royal Society.
- * ——— :—Scottish Geographical Society.
- § ——— :—Botanical Society.
- * Florence :—Società Italiana di Anthropologia e di Etnologia.

- * Florence :—Società Africana d' Italia.
- * Frankfurt :—Senckenbergische Naturforschende Gesellschaft.
- * Geneva :—Société de Physique et d' Histoire Naturelle.
- * Genoa :—Museo Civico di Storia Naturale.
- * Giessen :—Oberhessische Gesellschaft für Natur und Heilkunde.
- * Graz :—Naturwissenschaftlicher Verein für Styria.
- § Hague :—Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlansch-Indië.
- * Hamburgh :—Naturhistorisches Museum zu Hamburgh.
- * Halle :—Deutsche Morgenländische Gesellschaft.
- † — :—Die Kais. Leopoldinisch-Carolinische Akademie.
- * Hamilton :—Hamilton Association (Canada).
- * Harrisburgh :—Second Geological Survey of Pennsylvania.
- * Havre :—Société de Géographie Commerciale du Havre.
- * Helsingfors :—Societas pro Flora et Fauna Fennica.
- * — :—Société des Sciences de Finlande.
- § Ithaca (U. S. A.) :—Cornell University.
- * Königsberg :—Die physikalisch-Oekonomische Gesellschaft.
- * Lahore :—Editor, Civil and Military Gazette.
- § — :—Anjuman-i-Panjab.
- § — :—Agricultural Society.
- * Leyden :—Royal Herbarium.
- * Liége :—La Société Géologique de Belgique.
- * — :—La Société des Sciences.
- § Lille :—Société de Géographie.
- * Liverpool :—Literary and Philosophical Society.
- * London :—Anthropological Institute.
- * — :—Editor, Academy.
- * — :—Editor, Athenaeum.
- * — :—British Museum.
- * — :—Geological Society.
- * — :—Institution of Civil Engineers.
- * — :—Institution of Mechanical Engineers.
- * — :—Editor, Nature.
- * — :—Linnean Society.
- * — :—Royal Asiatic Society of Great Britain and Ireland.
- * — :—Royal Astronomical Society.
- * — :—Royal Geographical Society.
- * — :—Royal Institution.
- * — :—Royal Microscopical Society.
- * — :—Royal Society.
- * — :—Society of Telegraph Engineers.

- London :—Statistical Society.
- ——— :—Zoological Society.
- Lyons :—La Société d' Agriculture, d' Histoire Naturelle et des Arts Utiles.
- ——— :—Muséum d' Histoire Naturelle.
- ——— :—Musée Guimet.
- ——— :—La Société d' Anthropologie.
- § ——— :—La Société de Géographie.
- † Madras :—Literary Society.
- * ——— :—Government Central Museum.
- * Manchester :—Literary and Philosophical Society.
- § Melbourne :—Royal Society of Victoria.
- * Moscow :—Société Imperiale des Naturalistes.
- * ——— :—Imperial Society of Amateurs of Natural Sciences, Anthropology and Ethnology.
- * Munich :—K. Bayerische Akademie der Wissenschaften.
- * ——— :—Editor, *Repertorium der Physik*.
- † Netherlands :—Royal Society.
- * New Haven :—Connecticut Academy of Arts and Sciences.
- § ——— :—American Oriental Society.
- * Newport (R. I.) :—Natural History Society.
- * Ottawa :—Geological and Natural History Survey of the Dominion of Canada.
- † Oxford :—Bodleian Library.
- † ——— :—Indian Institute.
- Paris :—La Société de Géographie.
- ——— :—Société d' Anthropologie.
- ——— :—Société Asiatique.
- ——— :—National Library.
- ——— :—Société Zoologique.
- ——— :—Société Académique Indo-Chinoise.
- § ——— :—Institution Ethnographique.
- * Philadelphia :—Academy of Natural Sciences.
- § ——— :—American Philosophical Society.
- * Pisa :—Società Toscana di Scienze Naturali.
- § Prague :—K. K. Sternwarte.
- § Rio de Janeiro :—Museo Nacional.
- § Rome :—Società degli Spettroscopisti Italiani.
- § ——— :—R. Accademia dei Lincei.
- § Roorkee :—Editor, Professional Papers on Indian Engineering.
- * St. Petersburg :—Comité Géologique.
- * ——— :—Imperial Library.

- * St. Petersburg :—Russian Geographical Society.
- * ——— :—Académie Impériale des Sciences.
- * ——— :—Hortus Petropolitanus.
- * San Franciso :—Californian Academy of Arts and Sciences.
- * Schaffhausen :—Swiss Entomological Society.
- * Shanghai :—North China Branch, Royal Asiatic Society.
- * Simla :—United Service Institution of India.
- * Stettin :—Entomological Society.
- * Stockholm :—Royal Swedish Academy of Sciences.
- * Sydney :—Royal Society of New South Wales.
- * Toronto :—Canadian Institute.
- * Trieste :—Società Adriatica di Scienze Naturali.
- * Turin :—Reale Accademia delle Scienze.
- † Ulwar :—Ulwar Library.
- * Vienna :—Anthropologische Gesellschaft.
- § ——— :—K. K. Central-anstalt für Meteorologie und Erdmagnetismus.
- * ——— :—K. K. Akademie der Wissenschaften.
- * ——— :—K. K. Geologische Reichsanstalt.
- * ——— :—K. K. Zoologisch-Botanische Gesellschaft.
- * ——— :—Ornithologische Verein.
- * Washington :—Commissioners of the Department of Agriculture.
- * ——— :—Smithsonian Institution.
- § ——— :—U. S. Army Signal Service.
- * ——— :—United States Geological Survey.
- § ——— :—U. S. Coast and Geodetic Survey.
- * Wellington :—New Zealand Institute.
- * Württemberg :—Natural History Society.
- * Yokohama :—Asiatic Society of Japan.
- * ——— :—German Oriental Society.
- * Zagreb :—Archæological Society.

ABSTRACT OF COUNCIL PROCEEDINGS.

January 29th. Ordinary Meeting.

Read a letter from the Private Secretary to the Viceroy, notifying the acceptance by Lord Dufferin of the office of Patron of the Society.

With reference to a letter from the Commissioner of Orissa, advising the find of a collection of Sanskrit Manuscripts in one of the Maths of Pooree, it was resolved that the Commissioner be informed that the Society could take no measures until they knew what works were in the collection.

On the recommendation of the Philological Committee, the Council sanctioned the publication in the *Bibliotheca Indica* of a translation of

the Práyashitta of the Institutes of Parásara, to be edited by Baba Krishna Kamal Bhattachárjya.

A Resolution from the Government of India in the Home Department effecting further alterations in the Indian Treasure Trove Act was ordered to be recorded.

An exchange of publications was sanctioned with the Hamilton Association, Canada, as regards the Society's Proceedings only.

It was resolved that the name of Dr. E. Hultzsch of Dresden, be recommended to Government for entry on the List of those to whom Dr. Mitra's Notices of Sanskrit Manuscripts are distributed.

The appointment by the Secretary of Mr. J. F. Duplessis, as Assistant Secretary, was approved.

The Annual Report was read and approved; and the Annual Accounts for 1885, with the estimate of Receipts and Expenditure for 1886 were laid on the table.

On an intimation from Mr. Croft that he was about to leave India and would therefore be unable to serve on the Council, it was resolved that the names of Messrs. E. T. Atkinson, A. Simson and T. G. H. Moncreiffe be submitted for selection in place of Mr. Croft.

On the motion of the Honorary Treasurer to reduce the usual number of copies printed of the Society's Journal and Proceedings, it was ordered that the same number be continued to be printed, but that the Secretaries take steps to increase the exchange.

February 26th. Ordinary Meeting.

Read a letter from Mr. Henry Baden-Powell remitting a compounding fee of Rs. 160 for his admission as a Life-Member.

On the proposal of Dr. Mitra and the recommendation of the Philosophical Secretary, it was ordered that the whole of the Institutes of Parásara be translated for the *Bibliotheca Indica*, instead of the Práyashitta section only.

Read a letter from the Magistrate of Patna presenting the Society with two ancient Buddhist coins.

Read a circular from the Royal Academy of Sciences of Turin offering for competition the Bressa Prize, of the value of 12,000 Italian lire, to be awarded to the scientific author or inventor who shall have made the most important and useful discovery or published the most valuable work on Physical Science, Natural History, Mathematics, Chemistry, Physiology, Pathology, Geology, History, Geography and Statistics.

The various Committees for the current year were elected.

On an application from Mr. Smith, the proprietor of the City Press, for permission to publish selections from the records of the Society, it

was resolved that Mr. Smith be allowed to reprint articles from the Society's Journal previous to 1865, all responsibility with regard to the question of copyright to rest with the publisher.

On the recommendation of the Philological Committee, the Council accepted the proposal of Mr. L. White King to publish in the *Bibliotheca Indica*, certain histories of the three great conquerors of India, *viz.*, Mahmood, Timur, and Nadir Shah.

The names of Mr. J. Low, and Col. J. G. Forbes, who were largely in arrears of subscription, were ordered to be removed from the Member List and the sums due by them to be written off.

March 26th. Ordinary Meeting.

It was resolved to subscribe for one copy of "The Observatory" a monthly review of astronomy.

Major J. Waterhouse having resigned his trusteeship of the Indian Museum which he held on behalf of the Society, Mr. H. F. Blanford was nominated to the vacant place.

The Hon'ble J. Gibbs having tendered his resignation of the office of Vice-President, the Hon'ble H. J. Reynolds was appointed in his place, and Mr. A. Simson was nominated a Member of Council, in place of Mr. Reynolds.

It was resolved to subscribe for two copies of Babu Dinonath De's Urdu Grammar.

On the recommendation of the Philological Committee the publication of several Sanskrit works was sanctioned, details of which are given under the section "Bibliotheca Indica."

Mr. L. W. King having intimated that the *Tárikh-i-Tamini* had been already translated, it was ordered that its publication in the *Bibliotheca Indica* be discontinued.

On an application from the editor of the *Isábah*, Moulvi Abdul Hai, it was resolved that a copy of the work be obtained from Hyderabad and a copy of the *Nizamul Jetidal* be purchased, to help the Moulvi in his edition of the *Isábah*.

Read a letter from the Deputy Commissioner of Rohtak forwarding 5 silver coins which the Philological Secretary reported to be very bad specimens, of little value and not particularly rare. Resolved that the Panjab Government be advised to present one specimen each to the Indian Museum, and the Museums in Bombay, Madras, Lahore, Lucknow and Nagpur.

April 30th. Ordinary Meeting.

On the recommendation of the Philological Secretary, it was resolved to purchase an English translation of Dr. Emil Riebech's work on "The Chittagong Hill Tribes."

A Report from the Philological Secretary on a parcel of 204 copper coins received from the Secretary to the Government N. W. P. and Oudh having been read, it was ordered that that Government be advised to send specimens to the Indian Museum and other local Museums, and that intimation be given to such members of the Society as were especially interested in coins.

Mr. J. Beames was elected a Member of Council and expressed his willingness to act for Dr. Hoernle during the latter's absence on leave for three months.

On the recommendation of the Philological Committee, it was resolved to purchase "Jahani" a very old and valuable work on Muhammadan law, the price of which was Rs. 10-12.

Mr. E. T. Atkinson was appointed an Auditor for the Annual Accounts of 1884 in the place of Mr. J. Westland.

On an application from the Secretary, it was resolved that the Library Catalogue be distributed free to all members applying for it, but that the Centenary Review should be paid for by all Members joining after the date of its publication.

May 28th. Ordinary Meeting.

On an application from Major-General G. G. Pearse, it was ordered that his name be inserted on the Society's Register of Numismatists; and that the suggestions made by him with reference to the disposal of gold coins be circulated to Members of Council for an expression of opinion.

A letter was read from the Magistrate of Murshidabad on the subject of a stone pillar lying in fragments in his district and of an inscription thereon; it was resolved that a copy of the inscription with a note and a translation be published in the Journal.

An exchange of publications was sanctioned with the Societas pro Fauna et Flora Fennica of Helsingfors.

The Secretary reported that the accounts for 1884 had been audited by the Honorary Auditors.

On the recommendation of the Finance Committee, the Commission allowed to the Cashier was increased from one to two per cent.

A Memorandum on the life and labours of the late Rev. K. M. Banerjee, drawn up by the General and Philological Secretaries, was read and ordered to be published in the Proceedings.

June 25th. Ordinary Meeting.

An exchange of publications was sanctioned with the Société Africaine d' Italie.

On the recommendation of the Philological Secretary, the publication in the Bibliotheca Indica of the Sat Sai of Tulsi Das was sanctioned,

to be edited by Pandit Behárlál Chábé, with the proviso that the commentary be strictly confined to elucidating the text.

On an application from Dr. A. Sprenger, it was ordered that he be supplied with such Nos. of the *Bibliotheca Indica* and of the *Proceedings* as he may require to complete his collection.

July 30th. Ordinary Meeting.

Read a letter from the Government of India covering a revised List of Persons, Institutions and Libraries, to whom Notices of Sanskrit Manuscripts should be distributed. It was resolved that it be adopted in place of the old one.

Exchanges of publications were sanctioned with the Scottish Geographical Society, Edinburgh, and with the Brookville Natural History Society, Brookville (Indiana) U. S.

On the recommendation of the Philological Committee, Professor W. H. Lowe was authorised to edit a translation of the *Tuzak-i-Jahángiri* for the *Bibliotheca Indica*.

The Secretary having reported that Messrs. Trübner and Co. had returned part of the stock in their hands of the *Journal* and the *Bibliotheca Indica* which had a very small sale in Europe, the Council appointed a Sub-Committee to take into consideration what measures had best be taken to reduce the prices of these publications, so as to secure an increased circulation.

A Report from the Philological Secretary on a parcel of coins received from the Deputy Commissioner of Chindwarra was ordered to be forwarded to Government in accordance with the recent resolution under the Treasure Trove.

A specimen of a gold Viraraya Fanam, presented by the Madras Central Museum, was ordered to be announced at the next meeting of the Society.

August 27th. Ordinary Meeting.

A specimen of a Nagari gold Fanam was received from the Madras Central Museum.

The Secretary reported that Messrs. Trübner and Co.'s accounts for 1884 had been received and found correct, with the exception of a few trifling discrepancies, which they had been asked to rectify.

An exchange of publications was sanctioned with the Newport Natural History Society.

On the recommendation of the Philological Secretary, it was resolved to subscribe for two copies of a new edition of the "Amara" by Babu Anandarám Bárooáh, Offg. Mag. and Collector of Noakhally.

On the proposal of Dr. R. Mitra and the recommendation of the Philological Committee, the Council sanctioned the publication in the *Bibliotheca Indica* of (1) Jayadatta's Treatise on Ancient Hindu Veterinary Art, to be edited by Babu Umesa Chandra Gupta; (2) the Gadya Kusumánjali of Udayana Achárjya, to be edited by Professor Chandrakánta Tarkálankára.

Read a Memorandum from the Philological Secretary on sundry suggestions from Major-General Pearse with reference to the disposal of gold coins: it was resolved that a suggestion be made to Government that such coins, instead of being melted down after having been kept for one year, should be sent to England for distribution or for sale.

On the application of the Secretary, an additional grant of Rs. 1,000 was sanctioned to pay off outstanding debts and cover cost of printing to the end of the year.

Seven Reports from the Philological Secretary on finds of ancient coins were ordered to be read at the next monthly meeting.

September 24th. Ordinary Meeting.

An offer from Mr. P. B. Saville offering for sale a copy of Eastwick's "Kaiser-námah-i-Hind" was declined with thanks.

October 29th. Ordinary Meeting.

A letter was read from the Government of India with reference to the Society's proposal for the sale of coins in England, intimating that the question had been referred for orders to H. M. Secretary of State.

On an application from Dr. Emil Schlagintweit and the recommendation of the Philological Secretary, it was resolved that the Society's publications, which were sent to the late Professor Robert Schlagintweit, be continued to his brother, Dr. Emil Schlagintweit.

Several Reports on finds of old coins by the Philological Secretary were ordered to be communicated to the next meeting of the Society.

On the recommendation of the Philological Committee Mr. C. J. Lyall was authorized to prepare for the *Bibliotheca Indica* an edition of Tabrizi's commentary on certain Arabic Poems.

Read the Minutes in circulation of the Council on the draft Indian Copyright Bill: it was resolved that a letter be written to Government, embodying the objections of the Council.

On a reference from Dr. R. Mitra regarding the find of ancient MSS. in Pooree advised by the Commissioner of Orissa, it was resolved that that officer be asked for a copy of the Catalogue which had been

prepared, with the view of ascertaining whether the collection was worth purchasing.

An old Madras gold Pagoda presented by the Madras Central Museum was ordered to be exhibited at the next meeting of the Society.

November 26th. Ordinary Meeting.

On an application from Mr. Robert Philip Heilgers, Austro-Hungarian Consul, for copies of such of the Society's publications as may possess scientific interest, for the use of the "Fründberg" now in port on a Scientific Mission, it was resolved that a copy of the Centenary Review be sent to the Consul.

An application from the Perthes Geographical Anstalt for a gratis copy of the Centenary Review was granted.

Messrs. Trübner and Co. were authorized to sell the Centenary Review at 6 shillings per copy.

A letter from the Government of Bengal communicating the sanction of the Government of India to an application from the Philological Secretary to retain one specimen of all coins sent for examination, was ordered to be recorded.

Several reports by the Philological Secretary on finds of old coins were ordered to be read at the Society's next meeting.

December 31st. Ordinary Meeting.

An offer from Mr. Edward Thomas to lend the Society an original MS. copy of Zia-ud-din's "Tárikh Feroz Shah" to assist in the translation of the work sanctioned for the *Bibliotheca Indica* was accepted with thanks.

An exchange of publications with the Canadian Institute, Toronto was sanctioned, as regards the *Bibliotheca Indica*.

With reference to a letter from Dr. Beharilal Gupta asking to be relieved from his duties as editor of a translation of the "Susruta" it was resolved that the resignation be accepted, and that Dr. R. Sen, whom Dr. Gupta recommends as his successor, be written to for a specimen of the translation which he has prepared.

The minutes of the Council in circulation accepting a proposal from Dr. Hoernle to represent the Society at the next Congress of Orientalists to be held at Vienna were confirmed.

The Secretary reported that he had addressed Government on the subject of Dr. Hoernle's application to be recommended to Government as a Government representative to the Congress.

A Circular from the Société de Physique et d'Histoire Naturelle of Geneva offering for competition a prize of 500 francs for a monograph

on a genus or family of plants was ordered to be published in the Proceedings.

A proposal from the Philological Secretary to supply Professor Pischel of Jena and Dr. Garbe of Königsberg with gratis copies of the Society's publications and of the *Bibliotheca Indica* was sanctioned.

The list of Office-Bearers and members of Council for the ensuing year was prepared for circulation in accordance with Rule 44.

The Secretary submitted the Report of the Sub-Committee appointed to consider measures for reducing the prices of the Society's publications and securing an increased circulation. The Report was approved with certain changes and additions.

The Report having been read, the President invited the Meeting to put any questions or offer any remarks which any Member might think necessary in connexion therewith.

No remarks having been offered, the President moved the adoption of the Report. The motion was unanimously carried.

The PRESIDENT then addressed the Meeting as follows :

Address.

GENTLEMEN,—Owing to my absence from your last annual meeting I could not then thank you for the honour you did me by electing me your President for the year. I tender you my grateful acknowledgments for it now. The honour you conferred on me was the highest reward I could have aspired to for the humble services I had been able to render to the Society during my connexion with it. When I called to mind the renowned scholar who founded this Society, and the many illustrious personages who had, after him, from time to time, occupied your chair, I could not but think that your choice on the last occasion was not happy, for I was fully conscious of my many shortcomings and the infirmities of my age. My ideal of a perfect President is a person who is a complete master of the different branches of knowledge which come before the Society, one who can be a guide to our workers, and a competent judge of their work. And this too made me hesitate. My ideal, however, is unattainable. Your field is vast; it includes "all that is performed by man or produced by nature within the geographical limits of Asia," and no man in the present day can claim mastery over the whole of it. You felt this, and of late your practice has been to change your President every year, so as to have a representative of both science and literature, on alternate years. This is as it should be. You have also in a manner outgrown the necessity

of having the most learned man for your President. At the first start an association greatly needs the guiding hand and wise head of the ablest and the most energetic; but such is not the case with you now. A hundred years of the most successful career has made you perfectly independent of the aid of any one individual, however gifted he may be. Your business is carried on by Committees which include among its ranks the foremost men in their respective departments, and your President takes his place only as one among the workers. In fact, the special duty of your President now is, that of a Moderator, and in that respect what you require of him is diligence, regular attendance, and a lively interest in the welfare of the Society. In this view of the case, pardon me if I venture to say so, I thought that I yielded to none in my entire and earnest devotion to the good of the Society. For nine-and-thirty long years I had served the Society in different capacities, and it had been a source of high satisfaction to me that in every capacity I had been able to secure your approbation, and when you crowned your favours by placing me in the highest position in the Society, I believed I would not prove unworthy of your last mark of confidence and approbation. If I had no high pretension to knowledge, I knew that I had learnt, not a little by association with the members of this Society, to appreciate the value of knowledge, and had always tried my humble best to promote its cause, and for the short time that it may take for the remaining few grains of sand in my glass to run out, I shall never abate an iota in my exertions in its behalf. I depended, likewise, on the co-operation of the distinguished gentlemen who would be my colleagues in your Council. Whether my thoughts and calculations were right or wrong, it is not for me to judge; but I have the satisfaction of knowing that, now that the term of my service is out, I leave your affairs in no way injured. I must add, however, that for whatever success may have been achieved during the past year, the credit is due to my colleagues, and if there has been any failure I must take the blame thereof on myself.

Turning now from personal matters to the affairs of the Society, I notice that the annual report just read gives a very satisfactory account. Your member list is increasing; your finances are in a healthy condition; and your publications show no signs of decadence. The Society has begun the second century of its career with far greater vitality, energy, and capacity for useful work than what it possessed at the time of its birth. Comparisons are often odious, but without meaning any offence to any institution, I may boldly affirm that your publications, in extent, variety, and value, yield to no publication of any of the numerous sister Asiatic Societies extant. Your transactions came first into existence,

and have always retained, and now unquestionably maintain, their high position as the foremost of their kind.

By far the most important of your publications is the *Journal*. It is the repository of the finished results of the researches of your workers, and the credit of the Society depends entirely upon its merits; and as such, it is gratifying to notice that it fully sustains its well-established reputation. The first part of it, devoted to historical and literary subjects, brought out during the past year a number of highly interesting papers. Mr. Atkinson's notes on the History of Religion in the Himalaya are valuable accessions to our stock of knowledge on the subject, and are characterised by an amount of patient research and accurate observation which cannot fail to attract the attention of scholars. The archaeological notes on the Fatehghar district are equally interesting; Mr. Growse has made Indian archaeology a subject of special study, and his opinions deserve every consideration. The numismatical papers by Messrs. Rodgers, Theobald, and others are all valuable contributions in their respective spheres.

The second part of the *Journal* is of more diversified interest. Devoted to Natural Science, it has a wider field and much virgin soil to work upon. Our workers, too, in this department are more numerous and highly enthusiastic. In the scientific staff of the Indian Marine Survey we have some excellent coadjutors, and their contributions occupy a prominent place in our *Journal*. I may instance Capt. Carpenter's paper on the 'Swatch of no-Ground' in which a very reasonable explanation is given of the nature of an enigma which had puzzled many observers. There is, as you are aware, at the head of the Bay of Bengal, amidst a wide expanse of shallow water where the Ganges and the Brahmaputra are engaged in land-making, a hollow of great depth which is apparently not affected by the land-making process going on around it. This is accounted for now by the existence of a submarine ravine there, which is constantly scoured by a current of the sea coming from the southwest. Our zealous associate Mr. de Nicéville continues his labours on Indian Lepidoptera, and we have received several papers from him; and our esteemed friend Mr. Atkinson has contributed a most valuable monograph of an important section of Homopterous insects, that of *Rhynchota*. The representatives of this section are all small—some very minute,—but they are not, on that account, the less interesting. One of the diminutive representatives of this group is the lac insect, which yields us an article worth forty lacs of rupees a year. The patient care with which the author has prosecuted his researches among these not very attractive group of insects bears high testimony to his scientific devotion. Mr. Hill has contributed the results of some interesting observations made with

a solar thermometer at Lucknow, and we owe to Mr. Pedler a paper on the corrosion of lead in tea boxes which cannot but attract the attention of the planters of Assam, and lead to the adoption of measures which will prevent serious loss.

The third part of our Journal is called the 'Proceedings.' It is in fact our commonplace book, in which we keep a record of all the facts and information which we derive from our collaborateurs—facts of great use to our workers, but which our informants have not time to develope into finished essays. It serves also to keep our mufassil members duly and early informed of the monthly work of the Society. The value of such a publication depends upon its prompt and regular issue, and in this respect, thanks to the diligence of our General Secretary, there have been no reasons for complaint. The notes and memoranda published in it during the past year were generally well-received and accepted as useful.

The fourth serial of the Society is the 'Bibliotheca Indica.' Of this we have published no less than 39 fasciculi, including portions of 29 separate works in Sanskrit, Arabic, Persian, Mágadhi, and English. We have also sanctioned for publication, and are getting ready for press, 24 hitherto unpublished works. The object of this large selection is to work out the balance of funds which has accumulated in our hands. The Society is dependent upon the goodwill of a large number of editors, and it is impossible to get them all to turn out an exactly estimated amount of work every year. Ill-health, death, departure from India, and a variety of other causes lead to disturbances, and as it is extremely difficult to replace editors at a sudden emergency, our outturn is sometimes larger and sometimes smaller than our estimates. The large selection now made, it is expected, will soon enable us to keep abreast of the Government grant. As these works have been made over to different scholars, and each has a literary reputation to maintain, there is no reason to apprehend that the quality of our work will in any way suffer. Our selections have generally met with the approbation of European Orientalists, and our Society may well take pride in having done in this respect invaluable service to the cause of Oriental literature.

A complaint has often been made that the Society's editions were not accompanied with English translations, and that this omission detracts from their merit. There is some truth in this. There is no question that translations into English would make our publications more attractive than what they are at present. The propriety of having translations had engaged the attention of your Council when the 'Bibliotheca Indica' was first projected. In fact, it was made a primary condition. Experience,

however, soon demonstrated that it could not be strictly enforced. Those who undertook to edit our works and were competent to supply satisfactory translations were all engaged in official duties which left them little leisure, and your Council were soon driven to the choice between no publication, or texts without translations; and they wisely accepted the second branch of the alternative. The Oriental grant was originally made for the preservation of ancient texts, and the second grant of 1868 expressly names texts and texts only. And the reason for this is obvious. Texts were fast disappearing through neglect and other causes, and the primary object was their preservation. That object once attained, leisured men and scholars could take up the task of translation at any time at their convenience. The Council, accordingly, while offering every encouragement for translations, have thought fit not to retard the printing of texts. I am sure this plan will meet with your entire approbation.

The only other subject connected with the Society to which it is usual to advert is the obituary list. This, on the present occasion, is, I am happy to say, not heavy. In the Proceedings for May last, you have already placed on record your sense of the loss sustained by the Society by the death of the Rev. Dr. K. M. Banerjea. He was a profound scholar, master of many languages, and a zealous worker, who fully deserved your high estimation. Intimation has since been received of the demise of the oldest member of the Society, Lieut.-General Sir Arthur Purves Phayre, G. C. M. G., K. C. S. I., C. B., who died at Bray, near Dublin, on December 15. He was born in 1812, and elected a member of this Society in 1837. The best part of his official life was spent in the South-Eastern Provinces, and he contributed to our Journal fourteen different papers regarding the archaeology of Arakan, Pagan, Pegu and other places in Burma. He published a 'History of Burma from the Earliest Times to the end of the First War' in Trübner's Oriental Series, and a monograph of Burman Coins for the 'International Numismata Orientalia.' I have to announce also the death of Mr. J. W. Laidlay. He retired from India six and thirty years ago, but during his sojourn in this country he took a great interest in the affairs of your Society. He wrote a number of interesting papers for the Journal, and held the offices of Secretary and Vice-President for several years. To him you owe the scheme of the Bibliotheca Indica which has done so much to enhance the credit of the Society among European Orientalists.

The time at my disposal on the present occasion will not admit of my attempting a survey of the progress, outside the walls of this house, of the different branches of knowledge to which you direct your attention; nor is it necessary. Our Library table is so well-supplied with new

books and periodicals, and the diligence with which you study them, keeps you *au courant* of the history of progress, and you know quite as much of it as I do. Nevertheless, I think it is desirable to cast a glance—if it be only a mere casual glance—at some of those topics which are too intimately connected with your work.

In the department of Science, the Society's most active co-labourers on this side of India are the Geological, the Meteorological, and the Marine Surveys. I have already referred to some of the contributions we have derived from the last. The Geological Survey under the superintendence of my distinguished friend Mr. Medlicott, and the management of a staff of able officers, fully sustains its scientific renown. It issues three serials, of which the largest is the 'Palaeontologica Indica.' In its pages, during the past year, Professor Waagen gave to the world a valuable essay on the Productus-limestone fossils of the Salt Range, and Mr. Lydekker has brought out learned papers on Pre-tertiary and Post-tertiary vertebrates from different parts of India, illustrated by a large number of excellent plates. The 'Memoirs' of the Survey comprises, among others, a paper by Mr. Mallet on the Volcanoes of Barren and Narcondam islands in the Bay of Bengal, and another by Mr. Hughes on the Southern coal-fields of the Rewah-Gandowana Basin. The 'Records' of the Survey occupies the same place which the Proceedings do in your Society, and contains a variety of valuable notes. I can advert only to two of these, one on the Kashmir Earthquake of May last, by Mr. Jones, and the other on the Bengal Earthquake of July, by Mr. Middlemiss. These gentlemen trace with great scientific precision the seismic vertical at these two places, and the different phenomena observed. I refer to them because they are the best scientific accounts we have of the commotions which attracted much attention during the past year. In the absence of regular seismic observatories and instruments, with hardly any accurate record of even the time when they occurred, it has not been possible to calculate with any thing like scientific precision the rate at which the waves of the quakes progressed, and on the whole I cannot say that the occurrences have contributed much to the stock of our knowledge of the subject; but in matters of this kind we shall have to collect data for a long time before our physicists can venture upon safe generalisations. And as regards data, I believe, that in the two papers I refer to, all has been done that could be reasonably expected under the circumstances. I may add that there is a note in the 'Records' by Mr. Medlicott, which gives a summary of the most recent theories on the subject of earthquakes.

Adverting to earthquakes, I may as well recall to your mind the great storm-wave that swept away thousands of human beings from the Orissa coast in October last; but as yet I have seen no memoir published on the scientific aspect of the occurrence.

In the department of Natural History Mr. Wood-Mason continues his labours with unabated zeal. His last contribution is a brochure on the *Paraponyx oryzalis*, which commits sad havoc among rice-plants in the Burman Provinces. This is a sequel to his reports on the tea-bug and tea-mite of Assam. It is unfortunate that no means have yet been discovered for the destruction of these pests. Like the *Phylloxera* and the potatoe disease they continue to extend their ravages. But the nature of a disease must first be discovered, before its cure can be devised, and the duty of my friend Mr. Wood-Mason has hitherto been to ascertain, define, and describe the disease, and not to suggest cures. Dealing with animals which multiply by myriads, the task of extirpating them is well nigh impossible, unless largely aided by climatic influences.

I should here refer also to the investigations made during the past year regarding those microscopic forms of life which the researches of Davis, Bastian, Pasteur, and others have shown are intimately connected with disease. The last impetus was given in this direction by the discovery, by Dr. Koch, of the comma bacillus as the primary cause of cholera, and a great deal has since been done in ascertaining the anatomy, physiology, and habits of life of several species of microbes. There is a marked divergence of opinion as to the relation of the bacillus to cholera; and the prevailing opinion seems to be that the bacillus has no causal relation to that awful disease, and there are physiologists who cherish grave doubts about the efficacy of Pasteur's hydrophobic inoculation; but the advance made in the enquiry is certain, and we may hope ere long to arrive at a definite solution.

The most-esteemed coadjutor of your Society in the department of Antiquities is the Archaeological Survey of India. It has contributed since its establishment a total of 23 volumes, replete with matter of varied interest. During the past year it issued two volumes containing notices of various antiquities in Behar, Central India, Peshawar, the Usafzai country, and Central Rajputana. It has, as you are all aware, lately lost its guiding spirit by the retirement of General Alexander Cunningham from India, and this event will, I apprehend, seriously impair its usefulness. A humble labourer in the field in which that learned scholar worked so unremittingly, so zealously, and so successfully for considerably more than half a century, I have long watched the progress of his researches, and I have no hesitation in declaring that he is *facile princeps* in the field which he has made his own. He possesses a more thorough, more extensive, and a wider personal knowledge of Indian antiquities than any other European. His opinions are generally sound, and characterised by a calm, quiet, courteous, critical spirit which always commands respect. His retirement has created a gap in the ranks of

Indian archaeologists which I despair to see filled up within a short time. It is to be hoped that in his retirement he will have health, energy and inclination to give to the world some of the matured fruits of his unrivalled experience and knowledge.

Our fellow worker Mr. Grierson continues his researches with unremitting vigour. He has lately published a series of seven Grammars of the different Bihari dialects. These will not fail to be useful to district officers who have to acquire a colloquial facility in these media of speech. They will also be useful to philologists engaged in the study of the Comparative Grammar of the Sanskritic Vernaculars of India. Mr. Grierson has, likewise, in conjunction with Dr. Hoernle, brought out the first part of a dictionary of the Bihari language which has been very favourably noticed by the press. I understand that the continuation of this highly promising work is in a forward state of preparation, and may be expected to see the light at no distant day. Mr. Grierson has, moreover, undertaken to edit the 'Yogini Tantra' for our 'Bibliotheca Indica.' The labours of our associate Mr. Growse are well-known to you. His History of Mathura is the best district memoir lately published. His last work is an essay on the Architecture of Bulandshahar.

It has long been a matter of regret, that, while France possessed a complete translation of the renowned Indian epic the Mahábhárata, there was none extant in the English language. The desideratum is in a fair way of being supplied by Babu Pratápachandra Ráya of this city. He has already published 20 fasciculi of his translation, which complete nearly one half of the entire work.

It will be interesting to you to learn that some native publishers are now engaged in bringing out in serial Nos. a new edition of your Asiatic Researches.

From the far West comes to us a learned essay on the Roots, Verb-forms and Primary Derivatives of the Sanskrit language. It is from the pen of the renowned Sanskrit scholar, Professor Whitney, of New Haven.

In England there have appeared several books, which will doubtless interest you. The foremost on my list is a life of our former associate, Alexander Csoma de Körös, by our retired member, Dr. Theodore Duka. It has been most favourably received by critics, and is in every way a fitting monument of the renowned Hungarian scholar, the fruits of whose researches were first given out to the public in the pages of our transactions.

In Trübner's Oriental Series—a publication which has already well-established its position as a repository of standard Indian works—there has lately appeared a life of Buddha and Buddhist history. Mr. Rockhill, the author, has drawn his materials from the Kahgyur and

the Sthangyur collections of the Tibetans, and has worked out his theme with great care and diligence. Of course the Tibetan version is later than the Sanskrit original from which it has been drawn, and has not the same authenticity as the Lalita Vistara and the Mahávastu Avadána; but Mr. Rockhill's book is not the less interesting on that account. It is certain that all the lives of Buddha extant are more or less legendary, and it is only by a critical study of the different versions, such as the Sinhalese version, translated by Spence Hardy, the Siamese version by Alabaster, the Burmese version by Bishop Bigandet, the Chinese version by Samuel Beal, and others, that we can arrive at a correct historical account. In short, we are still in the stage of brick-making, and the edifice will follow hereafter.

We have lately had Mr. Edwin Arnold in this city, and his presence, doubtless, revived the interest with which you had read his "Indian Song of Songs" and the "Light of Asia." He has lately given to the English reader three new metrical renderings of Sanskrit originals with the same grace, elegance and fidelity which characterised his former works. These come to us under the English names of the "Secret of Death," the "Song Celestial," and the "Indian Seasons," but to the members of the Society they will be best known as the Bhagavad-gita, the Kátha Upanishad, and the Ritu-sañhára. They are welcome accessions to our Anglo-Sanskrit Library.

Some seventeen years ago the Government passed orders to institute a search for ancient Sanskrit MSS. in private libraries, and the work has hitherto been conducted with due diligence. To this Society was assigned the task of carrying on the search in Bengal, and the Society has printed upwards of three thousand pages of matter. The other Provinces have also done much in their respective spheres; the last publication received by me is a Catalogue of Coorg MSS. compiled under the superintendence of Mr. Rice. The search on the whole has been satisfactory, and the time will soon arrive when the Government should devise an organization to collate and digest the materials for a complete Catalogue of the entire body of Sanskrit literature extant in India. It will be a work that will highly redound to the credit of the British Indian Government, and prove most useful to oriental scholars.

To an Indian like me, the brief survey I have above sketched, affords, in one respect, a matter of painful reflection. I cannot but mourn that, amidst steady and arduous work, amidst hard struggle for progress, advancement, and knowledge,—for greater and greater light and mastery over the mysteries of physical phenomena, for throwing open the arcana of nature—the pioneers from among my countrymen should be so few. They should be much more and far more enterprising in the

service of knowledge in their country than what they are. It is a consolation, however, to me to notice that they have been awakened from their sleep of ages; the English leaven has set to work among them, and the example set by this Society is likely to be soon followed. I draw this inference not from individual efforts, but from the intellectual ferment visible in the native press. The quarterly reports of Indian publications issued in the different provincial Gazettes afford a healthy sign of the dawn of an early literary revival. I find that the Indian press brought out in course of four quarters nearly seven thousand different works or parts of works, in addition to keeping up a regular issue of well nigh a hundred newspapers, several daily. In Bengal, the people of which are intellectually the most advanced, there were issued in four quarters* no less than 2,395 works† against a total of 6,373 English publications in 1884. At first sight it might be supposed that the publications I refer to were mostly books for school use; but such was not the case. 1,759 of these are described as 'non-educational,' and 239 were Sanskritic. The average of the total is nearly 7 books a day. Only a few of these were by European authors. Doubtless many of these were worthless, and not a few of ephemeral interest; but I refer not to their character, but to their number. The number shows that the Bengali mind is in a ferment, and that it has taken a literary turn. Properly guided and trained this turn will lead it on to literary and scientific research. This Society sets my countrymen a noble example, and I earnestly trust that they will follow it faithfully. I notice that the number of native gentlemen elected as members of this Society during the past year was larger than in any previous year. I hope this increasing ratio will be kept up, and my countrymen will benefit by free intellectual association with the master minds of Europe.

It is not my wish to take up your time this night by advertizing to the merits of the Bengali publications; but there is one work named in the published lists which I may cite as an instance of the turn which some native minds have already taken; it is a summary, by Bábu Kshirodachandra Chaudhuri, of the theory of evolution and progress

* The reports of the last two quarters of 1885, not having yet been published, I take the last two quarters of 1884, and the first two quarters of 1885.

	Non-educational.	Educational.	Total.	Sanskritic.
† 1884 3rd Quarter	463	133	596	66
1884 4th Quarter	353	150	503	43
1885 1st Quarter	504	168	672	68
1885 2nd Quarter	439	185	624	62
	—	—	—	—
	1,759	636	2,395	239
	—	—	—	—

of life as given in the works of Darwin, Huxley, Bastian and other English writers on the subject. That such a book should find among Bengalis a sufficient number of readers to make it worth anybody's while to write it, is a significant fact, and I venture to think that the deduction I wish to draw from it is obvious.

The bend of the native mind has always been on the side of teleology. The problem of life has engrossed their attention from a remote period of antiquity, and many are the references to it that we find in our ancient literature. Our thinkers speculated freely and boldly, not unoften rising far above the narrow sphere to which the prevailing religion of the time wished to tie them down. Of late this spirit of enquiry has received a special impetus by the teachings of the Theosophists, and the published lists of vernacular books afford ample evidence of the fact. The process usually adopted is to graft the Darwinian theory of evolution on the Sánkhya and the Yoga doctrine of eternity of life, not as spirit, pure and simple, but as particles enclosed each in a material envelop. This envelop is technically called by our ancient philosophers *linga saríra* or 'rudimentary body.' In the language of modern European science it is the 'germ of life,' or 'organic cell,' or 'protoplasm.' The Theosophists call it the 'astral body.' Whatever it is, and whatever its name, its entity is accepted by a large and daily increasing body of European philosophers, and the manner in which it has been brought to bear upon the causation of instinct by Yogis is what I desire to bring to your notice.

European philosophers have found instinct to be a stumbling-block in their way. Paley took it to be 'a propensity prior to experience.' Whately defines it to be 'a blind tendency to some mode of action, independent of any consideration, on the part of the agent, of the end to which the action leads,' and Sir William Hamilton adopts the same definition. But the latest theory is, that it is to be referred to 'experience and reasoning, both in man and lower animals.' Darwin qualifies this by adding that 'in the lower animals the reasoning is from fewer ideas, is busied about fewer objects, and is exerted with less energy.' This is, however, not enough, as it does not cover the whole ground. It bears not at all on those actions which proceed from heredity, as in the case of the retriever cocking up its ears on hearing a gun fired and running after game without any previous training, when other dogs under similar circumstances would be frightened and disposed to run away for shelter. Nor does it cover those actions which are produced immediately after birth, such as sucking on the part of an infant just born, when there has been no opportunity whatever for forming ideas, however crude or rudimentary, much less of reasoning. The ancient Hindu theory

in the case was that the *linga sarira*, or protoplasm, retains in its mind impressions of all the experiences acquired in its former lives ; and these ordinarily remain latent, becoming active or vivid only when properly stimulated. These impressions are called *sañskára*. Dr. Morrell, in his Mental Philosophy, calls them 'residua.' He describes them thus—' When a given mental impression is produced upon us, it remains for a time before the consciousness, and then gives way to others. We know, however, that it is not *absolutely lost*; for, if proper conditions occur, the impression is renewed. The conclusion is, that there must be *something* deposited within us which subsists *permanently*, and which is equally there, whether it be at any moment the immediate object of our consciousness or not. This *something*, we term a *residuum*.' Dr. Morrell, however, limits the duration of this *residuum* to the period of existence of a life. The first *residuum* is produced immediately after the first experience in life, and others follow in succession ; but the whole stock at the end of a life is lost. Hindu philosophers carry the stock on from generation to generation, and so the stock is ever increasing and never ending, and our instincts are nothing more than these *residua* enlivened for each particular occasion. The eternity of the protoplasms being accepted as granted, the theory of the causation of instinct thus framed appears consistent enough. But it involves a variety of questions, religious, theological, and biological, which I am not at all disposed to take up now. I notice the theory simply because it has been revived and discussed in some Bengali publications during the past year, and leave it to such of our philosophic associates as are disposed to enquire about such matters to think over at their leisure, if they be so minded. The idea will, I am sure, appear novel to European philosophers, and it is to be hoped that they will examine it with the care which its importance deserves.

Dr. Mitra then proposed a vote of thanks to the Honorary Secretaries and to the Honorary Treasurer for their exertions on behalf of the Society.

The motion was carried unanimously.

The PRESIDENT announced that the Scrutineers reported the result of the election of Office-bearers and Members of Council to be as follows :—

President.

E. F. T. Atkinson, Esq., B. A., C. S.

Vice-Presidents.

Dr. Rájendralála Mitra, LL. D., C. I. E.

Hon. H. J. Reynolds, B. A., C. S., C. S. I.

Lieut.-Col. J. Waterhouse, B. S. C.

Secretaries and Treasurer.

- J. Wood-Mason, Esq.
 Dr. A. F. R. Hoernle.
 F. E. Pargiter, B. A., C. S.
 F. W. Peterson, Esq., F. C. S.

Other Members of Council.

- H. B. Medlicott, Esq., F. R. S.
 D. Waldie, Esq., F. C. S.
 C. H. Tawney, Esq., M. A.
 Babu Pratápa Chandra Ghosha, B. A.
 Dr. D. D. Cunningham.
 Dr. Mahendralálí Sarkár, C. I. E.
 A. Simson, Esq.
 E. Gay, Esq., M. A., F. R. A. S.
 Pandit Maheschandra Nyáyaratna, C. I. E.
 J. Beames, Esq., C. S.

The following gentlemen were appointed Auditors to examine and report on the accounts of the past year :

- J. A. Anderson, Esq.
 T. G. H. Moncreiffe, Esq.

The Meeting was then resolved into the Ordinary Monthly General Meeting.

E. F. T. ATKINSON, Esq., B. A., C. S., President, in the Chair.

The minutes of the previous meeting were read and confirmed.

Sixteen presentations were announced, details of which are given in the Library List appended.

The following gentlemen are candidates for election at the next meeting—

1. R. D. Mehta, Esq., proposed by the Hon'ble V. N. Mandalik, C. S. I., seconded by Dr. Rájendralálá Mitra, C. I. E.
2. Babu Hirálál Sen, proposed by Dr. Rájendralálá Mitra, C. I. E., seconded by Babu Pratápa Chandra Ghosha, B. A.
3. Mr. Asutosh Gupta, proposed by Babu Gourdás Baisák, seconded by F. E. Pargiter, Esq., B. A., C. S.

A letter was read from Mr. H. M. Percival accepting the office of Honorary General Secretary.

The COUNCIL reported the receipt from the Government of Bengal of the following notification containing revised rules for the working of the Indian Treasure Trove Act.

NOTIFICATION.

The 29th October 1885.—The following revised rules for the working of the Indian Treasure Trove Act (VI of 1878) have been approved by the Lieutenant-Governor, and are hereby published under section 19 of the said Act for general information, in modification of those published at page 1223 of the *Calcutta Gazette* of the 20th November 1878:—

1. The notification under section 5(a) shall be published at the Collector's cutcherry, sub-divisional cutcherry, Munsif's cutcherry and police station within the jurisdiction of which the treasure was found, and at some conspicuous spot in the village in which it was found.

2. On receipt of any application under section 4, or on receipt of information from any person other than the finder that treasure has been found, the Collector shall report the fact to the Commissioner, stating—

- (1) name of finder;
- (2) nature of treasure, and number of coins, if any;
- (3) approximate value;
- (4) date of finding;
- (5) whether the treasure, being coin, has been acquired under section 16, or whether it is recommended that Government should acquire the treasure.

A copy of this report shall be sent to the Asiatic Society at Calcutta for information.

3. In the case of information being given by a person other than the finder, the Collector shall issue a notice under section 5(b) of the Act on the person informed against to show cause why he should not be prosecuted for not giving the required notice; and in the event of no cause being shown, the Collector shall take such further action as may seem expedient.

4. All notices under section 5 shall be served at the cost of Government.

5. On receipt of the Collector's report, the Commissioner will, if he thinks the property ought to be acquired by Government, report the case for the orders of the Board of Revenue. This rule does not apply to cases where coins are the property found.

6. Collectors shall *ordinarily* acquire, under section 16 of the Act (without its being necessary for them to obtain the sanction of higher authority) the whole of any coins found, whether gold, silver, or copper, that appear to be old and not of British mintage.

Explanation.—These include coins struck at Calcutta, Moorshedabad, Benares, Surat, Arcot, in the name of Shah Alum, dated 19th Juloos.

7. If for any special reasons, such as the largeness of the quantity found, or the coins being known to be of merely metal value, the

Collector considers it unnecessary to acquire the whole of the coins found, he shall, in the report mentioned in rule 2 above, state (sixthly) why he considers that the whole of the coins found need not be acquired on behalf of Government.

8. On receipt of the report, the Commissioner, if he thinks that the whole of the coins found should not be acquired, shall report the case for the orders of Government.

9. Coins acquired under section 16 of the Act shall be sent to the Asiatic Society at Calcutta, and the Society shall report to this Government the number and nature of the coins, and their probable numismatic value.

10. Collectors are empowered to purchase, otherwise than when proceeding under the provisions of the Treasure Trove Act, any coins of the age and description stated in rule 3 above, when they are less than Rs. 10 in value, on payment of a sum equal to the value of the materials of the coins, together with one-fifth of such value. Coins so purchased shall be treated in the manner described in the last section.

11. All fines levied under this Act shall be credited to Land Revenue, "Miscellaneous," and any treasure which vests in Government under section 20 or 21 shall, unless it be such as it is thought advisable for Government to retain, be sold by public auction to the highest bidder under the orders of the Commissioner, and the proceeds be credited to the above head.

12. All Commissioners and Collectors should append a paragraph to their land revenue annual reports stating whether any applications have been presented during the year under report under section 4, or any proceedings taken before the Magistrate under section 20 or 21, or under rule 10 above.

A. P. MACDONNELL,
Secretary to the Govt. of Bengal.

No. 252—14 Mis.

Copy forwarded to the Honorary Secretary, Asiatic Society, Bengal, for the information of the Society.

By order of the Lieutenant-Governor of Bengal,

R. MACPHERSON,

Offg. Under-Secy. to the Govt. of Bengal.

CALCUTTA,

The 16th January 1886.

The PHILOLOGICAL SECRETARY read :

1. A Report on 60 old copper coins forwarded by the Secretary to the Government N. W. Provinces and Oudh, with his No. 222, dated 3rd July 1885.

1. The coins were found in the Hamirpur District. The exact find spot is not noted. They consist of 47 large and 13 small specimens, all of copper.

2. They belong to the following Sultans of Delhi:—

(1), XXXVIth Sultan, <i>Sher Sháh</i> , 947-952 A. H. =				
1540-1545, A. D.				
a, I. type, lettered surfaces, described in E. Thomas' Chronicles, p. 402, No. 355; dated 951, specimens				3
b, II. type, square areas, with date on obverse area, see Thomas' Chronicles, p. 402, No. 356, mint Gwálíor dates, 950, 951, 952,			specimens	5
c, III. type, square areas with dates on margin; see Thomas' Chronicles, p. 403, No. 357, mint Nar-nól, Kalpí; dates, 950, 951			specimens	4
d, IV. type, square area, with date on obverse area, and legend <i>Sher Sháh Sultán Abul-musaffar</i> on reverse area; new, not in Thomas' Chronicles; mint on margin, illegible; date 951;			specimen	1
				13
(2) XXXVIIth Sultan, <i>Islám Sháh</i> , 952-960 A. H. =				
1545-1552 A. D., type, lettered surface, Thomas' Chronicles, p. 413, No. 363.				
a, dated 952 ² , 953 ² 954 ¹ , 955 ¹ , total	...			5
b, illegible dates	total	...		14
				19
(3) XXXVIIIth Sultan, <i>Muhammad Sháh</i> , 961-964 A. H. = 1553-1556 A. D., 962 ¹ , 963 ¹ total	...			5
(4) Moghul Sultan, <i>Akbar</i> , 963-1014 A. H. = 1556-1605 A. D.				
a, large, date 968 ¹ , 987 ¹ , 975 ² , 980 ² , illegible, ⁴ total	...	...	...	10
b, small, one, dated 972 ¹ , illegible, ⁵ total	...			6
				16
3. Seven belong to Sultans of Gujerat; viz.:				
1, Sultan <i>Mahmúd Sháh bin Latif</i> , 944-961 A. H. = 1537-1553 A. D.			specimens	4
2, Undetermined,			specimens	3
				7
Grand total	...			60

A communication was read from Kavirája Shyamaldás, Private Secretary to His Highness the Mahárána of Udaipur, forwarding 2 ancient coins, with a descriptive note.

Dr. R. Mitra read the following extract from a letter from Bábú Niranjan Mukarji, dated Mandi, August 1885, and submitted to the meeting the facsimiles of inscriptions therein referred to.

"I am at present a guest of His Highness Rájá Bijay Sen Bahádur here. He told me that he is descended from the Sen Rájás of Gaur, and that his ancestors when attacked by Bakhtiar Khilji fled from Gaur to Nava Dweep, and thence went to Bikrampur, which place they were also obliged to abandon on account of the oppression of the Muham-madans. From Bengal his ancestors first came to the Punjab ; and Rup Sen founded the present city of Ruper after his own name. At Ruper they lived for a long time, till again attacked by their old enemies, the head of the family Babu Sen took shelter in these hills. One branch embraced the Muhammadan religion to save themselves from further persecution. They now own the chiefship of Kastewar, within the Kashmir territory. Another branch of this family is the Rájá of Suket. This place was formerly called Manipur, and, being the Ásrama of Mán-dava Rishi is now called Mandi. Since then this family is now exercising sovereign power over a large part of these hills. I asked the Rájá if he could show me any document or engraving or anything else by which this tradition of his could be substantiated. He replied that there was nothing in his possession by which he could prove it. On further inquiry I learnt from him that his ancestors, when they first came here from Ruper, built two temples, and both of them still exist. They are made of stone, and there are some inscriptions on them which none can deciper here ; also there are some stone monuments which they call here Barcillas. In some of them there are also inscriptions in some unknown character. I have visited the temples : they are certainly very old and made of stone. One is of Panchamukhi (5-faced) Mahádeva and the other of Triambaka. Both the temples have been made in the old Hindu style, and are sculptured over with the figures of different Hindu deities. The Barcillas are only slabs of large stones standing upon the earth on the river side where the funeral ceremonies of the former Rájás had taken place. I have taken impressions of all these inscriptions and send them to you, enclosed herein. Please try if you can deciper them. The Rájá Bijay Sen is a Surya Vansee Chattri, and so, he says, were also his ancestors in Bengal."

Dr. Mitra said that the tradition referred to was of great interest in connection with the facts which he brought to the notice of the Society many years ago regarding the caste of the Sena Rájás of Bengal. Those

facts left no room for doubt that the Rájás were Kshatriyas, and it was gratifying to him to find that his inference was so well borne out by the scions of those Rájás, and in places so far away from Bengal. Judging by the character of the inscriptions they were of the date which the tradition assigned them ; but the facsimiles were very smudgy and full of lacunæ, and he could not read any date in them. The genealogy of the dedicators of the temples could not also be very satisfactorily read. A few squeezes from the inscriptions would perhaps help the reading better, but Bábu Niranjan Mukarji having come away from Mandi none could be obtained. The Barcillas are obviously Satí stones.

The following papers were read—

1. *On a second species of Uredine affecting the Himalayan Spruce fir (Abies Smithiana, Forbes.)*—By SURGEON A. BARCLAY, M. B., Bengal Medical Service.

The paper will be published in full in Part II of the Journal for 1886.

2. *The Decline of the Sámánis.*

(Abstract.)

This paper is an addition to the numerous contributions made by numismatists towards a history of the Muhammadan empire as established by coins comprising the leading cabinets of the world. For such a purpose every coin accurately described, Mr. Oliver thinks, may prove of value. In order to make such descriptions intelligible and to invest the dry bones of numismatics with something of interest Mr. Oliver has attempted to sketch in this paper an outline of the decline of one, and the rise of another dynasty on the banks of the Oxus. Máwará-un-Nahr, better known as Transoxania, comprises the territory bounded on the north by Tashkand, on the east by Khoṭkand, on the west by Balkh and on the south by Khiva ; the capital of which was Samarkhand, and under the Sámánis, Bukhárá.

The authorities used by Mr. Oliver are mainly Tabakát-i-Núsiri of Minháj-i-Saráj, with Major Raverty's notes, the Kitab-i-Yarnim of Al Utbi, and Vambery's History of Bukhárá with selected translations from other chronicles.

3. *The Birth-day of Akbar.*

(Abstract.)

In this paper Kavirája Shyamaldás endeavours to ascertain from various data collected by him, the authentic date on which the Emperor Akbar was born. The Persian authors whom he has consulted are not

at all unanimous on this point, and the English authorities Dow, Erskine, Elliot and others appear simply to have followed Abul Fazl without examination. The conclusion at which the author arrives, after having carefully sifted the evidence on the subject at his disposal, is that Akbar was born on the 14th Shaban A. H. 949 = 23rd Nov. A. D. 1542.

The paper will be published in full in the Journal Part I for 1886.

4. *List of the Lepidoptera Heterocera, collected in Tavoy and Siam in 1884-85 by the Indian Museum Collector, under C. E. PITMAN, Esq., C. I. E., Chief Superintendent of Telegraphs. Communicated by the NATURAL HISTORY SECRETARY.*

The paper will be published in full in Part II of the Journal for 1886.

LIBRARY.

The following additions have been made to the Library since the meeting held in January last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII. No. 4, November, 1885.

_____. _____. American Journal of Philosophy, Vol. VI, No. 3, October, 1885.

_____. _____. Circulars, Vol. V, No. 45, December, 1885.

Berlin. Entomologische Verein,—Zeitschrift, Vol. XXIX, No. 2.

Bombay. Indian Antiquary,—Vol. XIV, No. 177, December, 1885; Vol. XV, No. 179, January, 1886.

Brussels. Musée Royal d'Histoire Naturelle de Belgique,—Vol. IV, No. 1.

Calcutta. Original Meteorological Observations,—September, 1885.

Chicago. American Antiquarian and Oriental Journal,—Vol. VII, No. 6, November, 1885.

Edinburgh. Scottish Geographical Magazine,—Vol. I, Nos. 4—12, April to December, 1885.

Havre. Société de Géographie Commerciale,—Bulletin, No. 5, September to October, 1885.

- Lahore. Anjuman-i-Punjab,—Journal (English section), Vol. VI, Nos. 1—5.
- Liverpool. Literary and Philosophical Society,—Proceedings, Vol. XXXVIII.
- London. Academy,—Nos. 711—715.
- _____. Anthropological Institute of Great Britain and Ireland,—Journal, Vol. XV, No. 2, November, 1885.
- _____. Athenaeum,—Nos. 3034—3038.
- _____. Geological Society,—Quarterly Journal, Vol. XLI, Part 4, November, 1885.
- _____. _____. List of Fellows, November 1st, 1885.
- _____. Institution of Civil Engineers,—Minutes of Proceedings, Vol. LXXXII.
- _____. Institution of Mechanical Engineers,—Proceedings, No. 4, August, 1885.
- _____. _____. Brief subject-Index, Vols. LIX—LXXXII. Sessions 1879-80 to 1884-85.
- _____. _____. General Index to Proceedings, 1874—1884.
- _____. Nature,—Vol. XXXIII, Nos. 842—846.
- _____. Royal Astronomical Society,—Monthly Notices, Vol. XLV, No. 9.
- _____. Royal Geographical Society—Proceedings, Vol. VII, Nos. 10 and 11, October and November, 1885.
- _____. Royal Microscopical Society,—Journal, Vol. V (series II), Part 5, October, 1885.
- _____. Royal Society,—Proceedings, Vol. XXXVIII, No. 238.
- _____. Statistical Society,—Journal, Vol. XLVIII, Part 3, September, 1885.
- _____. Zoological Society,—Proceedings, Part III, 1885.
- Munich. Akademie der Wissenschaften,—Abhandlungen, Historische Classe, Vol. XVII, No. 2.
- _____. _____. Sitzungsberichte, Mathematisch-Physikalische, No. 4, 1884; No. 1, 1885.
- _____. _____. _____. Philos-Philol-Historische Classe, Nos. 5 and 6, 1884; No. 1, 1885.
- Paris. Société d'Anthropologie,—Bulletins, Vol. VIII (series 3rd), No. 3.
- _____. Société de Géographie,—Compte Rendu des Séances, Nos. 19 and 20, 1885.
- _____. _____. Bulletin, Vol. V (series 7th), No. 3.
- Yokohama. Asiatic Society of Japan, Transactions, Vol. XIII, Part 2.

MISCELLANEOUS PRESENTATIONS.

Catalogue of the Lizards in the British Museum, Vol. II. 8vo. London, 1885.

BRITISH MUSEUM, LONDON.

Lectures on Mahomedan Law, by Syud Amir Ali, M. A. (The Tagore Law Lectures for 1884). 8vo. Calcutta, 1885.

CALCUTTA UNIVERSITY.

A Collection of Papers on Bee-keeping in India. Fcp. Calcutta, 1883.
J. C. DOUGLAS, Esq.

General Report on Public Instruction in Bengal. Fcp. Calcutta, 1885.

Annual Report of Emigration from the Port of Calcutta to British and Foreign Colonies for 1884-85. Fcp. Calcutta, 1885.

GOVT. OF BENGAL.

Forest Department Code. 8vo. Calcutta, 1886.

Further correspondence respecting Central Asia. No. 4, 1885. Fcp. London, 1885.

Papers on the Silver question. Fcp. London, 1885.

Parliamentary Papers. East India Army System. Fcp. London, 1885.

GOVT. OF INDIA, HOME DEPARTMENT.

GOVT. OF INDIA, SANITARY COMMISSIONER.

Administration Report of the Madras Presidency for the year 1884-85.
Fcp. Madras, 1885.

GOVT. OF MADRAS.

Catalogue of Siwalik Vertebrata in the Indian Museum, Part 1, Mammalia. 8vo. Calcutta, 1885.

INDIAN MUSEUM, CALCUTTA.

THE GOVERNMENT OF INDIA.

PERIODICALS PURCHASED.

- Allahabad. Punjab Notes and Queries,—Vol. III, Nos. 27 and 28, December, 1885 and January, 1886.

Berlin. Deutsche Litteraturzeitung,—Vol. VI, Nos. 39—45.

—. Journal für die reine und angewandte Mathematik,—Vol. XCIX, No. 2.

Bombay. Legends of the Panjāb, Vol. III. No. 26. May, 1886.

Calcutta. Calcutta Review,—Vol. LXXXII, No. 163, January, 1886.

—. Indian Medical Gazette,—Vol. XXI, No. 1, January, 1886.

Cassel. Botanisches Centralblatt,—Vols. XXIII, No. 13; XXIV, Nos. 1—6.

Edinburgh. Edinburgh Review,—Vol. CLXIII, No. 333, January, 1886.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XIV, No. 12.

Giessen. Jahresbericht über die Fortschritte der Chemie,—No. 1, 1884.

Göttingen. Gelehrte Anzeigen,—Nos. 19—21, 1885.

—. Nachrichten,—No. 8, 1885.

—. Beiblätter,—Vol. IX, No. 12.

—. Hesperos,—Vol. IV, Nos. 106—108.

—. Literarisches Centralblatt,—Nos. 40—46, 1885.

—. Literatur-Blatt für Orientalische Philologie,—Vol. II, Nos. 7—9.

London. Annals and Magazine of Natural History,—Vol. XVI, Nos. 94 and 95, October and November, 1885.

—. Chemical News,—Vol. LII, Nos. 1360—1364.

- London. Entomologist,—Vol. XVIII, Nos. 269 and 270, October and November, 1885.
- _____. Entomologist's Monthly Magazine,—Vol. XXII, Nos. 257 and 258, October and November, 1885.
- _____. Ibis,—Vol. III (series 5th), No. 12, October, 1885.
- _____. Journal of Botany,—Vol. XXIII, No. 274, October, 1885.
- _____. London, Edinburgh, and Dublin Philosophical Magazine, and Journal of Science,—Vol. XX, Nos. 125 and 126, October and November, 1885.
- _____. Mind,—Vol. XI, No. 41, January, 1886.
- _____. Nineteenth Century,—Vol. XIX, No. 107, January, 1886.
- _____. Publishers' Circular,—Vol. XCIV, Nos. 1158 and 1159.
- _____. Quarterly Journal of Microscopical Science,—Vol. XXV, No. 50, October, 1885.
- _____. Quarterly Journal of pure and applied Mathematics,—Vol. XXI, No. 82, October, 1885.
- _____. Quarterly Review,—General Index to Parts 1 and 2, Vols. CXLI—CLIX.
- _____. Society of Arts,—Journal, Vol. XXXIV, Nos. 1726—1730.
- New Haven. American Journal of Science,—Vol. XXX, Nos. 178 and 179, October and November, 1885.
- Paris. Academie des Sciences,—Comptes Rendus des Séances, Vol. CI, Nos. 12—18.
- _____. Annales de Chimie et de Physique, Vol. VI (series 6th), October and November, 1885.
- _____. Journal des Savants,—September and October, 1885.
- _____. Revue Critique,—Vol. XX, Nos. 39—44.
- _____. Revue des Deux Mondes,—Vol. LXXII, No. 4; Vol. LXXIII, No. 1.
- _____. Revue de Linguistique,—Vol. XVIII, No. 4.
- _____. Revue Scientifique,—Vol. XXXVI, Nos. 13—19.
- Vienna. Orientalische Museum,—Oesterreichische Monatsschrift für den Orient, Vol. XI, No. 12.

BOOKS PURCHASED.

- BOHTLINGK, OTTO. Sanskrit Wörterbuch in Kurzerer Fassung, Part VI, No. 1. 4to. St. Petersburgh, 1885.
- DISTANT, W. L. Rhopalocera Malayana, Part X. 4to. London, 1885.
- FALLON, S. W. A. Dictionary of Hindu Proverbs. 8vo. Benares, 1885.
- Report of H. M. S. "Challenger" Zoology, Vol. XII. 4to. London, 1885.
- WHERRY, REV. E. Commentary on the Quran, Vol. III. 8vo. London, 1885.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MARCH, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 3rd March, 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty presentations were announced, as detailed in the appended Library list.

In accordance with Rule 7 of the Society's Bye-Laws the following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members :—R. D. Mehta, Esq., proposed by Mr. Mandalik, seconded by Dr. R. Mitra, C. I. E.; Babu Hirálál Sen, proposed by Dr. R. Mitra, C. I. E., seconded by Babu P. C. Ghosha, B. A.; Ashutosh Gupta, Esq., C. S., proposed by Babu Gaurdás Bysák, seconded by F. E. Pargiter, Esq., C. S.

In accordance with Rule 5 of the Society's Bye-Laws the Secretary submitted the names of the following gentlemen as candidates for Ordinary Membership :—J. F. Fleet, Esq., C. S., proposed by Dr. A. F. R. Hoernle, seconded by E. T. Atkinson, Esq., C. S.; Babu Rádhábal-labha Chaudhuri, proposed by Babu P. C. Ghosha, seconded by Dr. M. L. Sarkár.

The following gentleman has intimated his wish to withdraw from the Society :—Surgeon Major C. J. J. Jackson.

The PHILOLOGICAL SECRETARY exhibited a collection of ancient Copper Coins sent by Rai Shyam Bahadur, Vakil, Chupra.

The SECRETARY read the names of the following gentlemen who had been appointed by the Council to serve on the several Committees during the current year :

FINANCE COMMITTEE.

Dr. Rájendralála Mitra.	J. C. Douglas, Esq.
Hon'ble H. J. Reynolds.	Lt.-Col. J. Waterhouse.
H. B. Medlicott, Esq.	T. G. H. Moncrieffe, Esq.

LIBRARY COMMITTEE.

Dr. Rájendralála Mitra.	Lt.-Col. J. Waterhouse.
Hon'ble H. J. Reynolds.	C. H. Tawney, Esq.
H. F. Blanford, Esq.	Dr. Mahendralála Sarkár.
H. B. Medlicott, Esq.	Babu Pránnáth Sarasvati, Pundit.
D. Waldie, Esq.	Babu Pratápa Chandra Ghosha.

PHILOLOGICAL COMMITTEE.

Dr. Rájendralála Mitra.	Col. A. C. Toker.
Nawab Abdul Latif, Khán Bahádur.	J. Boxwell, Esq.
J. Beames, Esq.	Moulvie Kudábaksh Khán Bahádur.
F. S. Growse, Esq.	Col. H. J. Jarrett.
Dr. G. Thibaut.	Pundit Maheschandra Nyáyaratna.
C. J. Lyall, Esq.	Babu Haraprasád Sástri.
G. A. Grierson, Esq.	Babu Pratápa Chandra Ghosha.
C. H. Tawney, Esq.	Babu Nilmani Mukherji.
Sayyid Ahmad, Khán Bahádur.	Dr. Führer, Lucknow.
	Dr. Mahendralála Sarkár.

NATURAL HISTORY COMMITTEE.

H. B. Medlicott, Esq.	L. de Nicéville, Esq.
D. Waldie, Esq.	Babu Pramatha Náth Bose.
Dr. G. King.	Dr. Mahendralála Sarkár.
T. E. Peal, Esq.	Dr. J. Scully.
R. D. Oldham, Esq.	E. C. Cotes, Esq.

PHYSICAL SCIENCE COMMITTEE.

H. F. Blanford, Esq.	Rev. Father Lafont.
H. B. Medlicott, Esq.	Dr. Mahendralála Sarkár.
D. Waldie, Esq.	R. D. Oldham, Esq.
Lt.-Col. J. Waterhouse.	E. J. Jones, Esq.
Alex. Pedler, Esq.	

COINS COMMITTEE.

Dr. Rájendralálá Mitra.	C. J. Rodgers, Esq.
J. H. Rivett-Carnac, Esq.	V. A. Smith, Esq.
Major W. T. Prideaux.	

HISTORY AND ARCHAEOLOGICAL COMMITTEE.

Dr. Rájendralála Mitra.	F. S. Growsé, Esq.
Hon'ble H. J. Reynolds.	Babu Pránnáth Sarasvati, Pundit.
Kavirája Shyamaldás.	J. H. Rivett-Carnac, Esq.
R. R. Bayne, Esq.	Capt. R. C. Temple.
Babu Pratápa Chandra Ghosha.	Amir Ali, Esq.

The following papers were read—

1. *On a new species of Uredine parasitic on Cedrus deodara.—By A. BARCLAY, M. B.*

This paper will be published in full, with illustrations in the forthcoming number (2) of the Journal Pt. II, for the current year.

2. *On place-names in Merwara.—By R. S. WHITEWAY.*

(Abstract.)

In this paper the local names of places in the British District of Merwara have been collected to explain the peculiarities of the local form of Hindi in use in the district, and also to illustrate the genesis of such names in general from some peculiarity in the history, locality or physical conformation. These names are of three classes—those of villages, tanks and hill streams and valleys. The British district of Merwara is a round strip of country along the main line of the Aravalis and separates Meywar from Marwar.

The paper will be published in the Journal, Part I.

3. *On South Indian Coins.—By CAPTAIN R. H. C. TUFNELL, Madras Staff Corps.*

The author sends a collection of fanams from Mysore and other places in Southern India for inspection of members of the Society, and will be glad to exchange those of which he has duplicates for Northern Indian coins with any member who wishes to do so. The collection comprises issues of the Mysore state and the smaller states once independent but now included within its boundaries, also coins of the Muhammadan dynasty in Mysore, of the Gajapati sovereigns of Orissa, of the Pandyan kings of the 11th and 12th centuries, of the Sinhalese Chola dynasty, and several other types which have not yet been identified, and a few of the later Muhammadan conquerors.

The paper will be published in Part I of the Journal.

MR. WOOD-MASON exhibited living specimens of the Caterpillars of the 'Endi' silk-moth (*Philosamia ricini*) and of the Tusser Moth (*Antheraea mylitta*), and made some remarks upon them.

The PRESIDENT announced that it had been suggested that the meetings of the Society might be made more interesting if subjects for conversation were brought forward after the disposal of the regular business; the meeting being then resolved into a Conversazione for the discussion of subjects to be fixed on beforehand:—Natural History subjects being taken up at one meeting, and Philological subjects at another, alternately.

LIBRARY.

The following additions have been made to the Library since the meeting held in February last.

TRANSACTIONS, PROCEEDINGS, AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII, No. 5, December, 1885.

Bombay. Indian Antiquary,—Vols. XIV, Part 178, December 1885, Part 2; XV, Part 180, February, 1886.

Calcutta. Geological Survey of India,—Records, Vol. XIX, Part 1.

Chicago. American Antiquarian and Oriental Journal,—Vol. VIII, No. 1, January, 1886.

Dublin. Royal Geological Society,—Journal, Vol. VI, Part 3.

—. Royal Irish Academy,—Proceedings, Polite Literature and Antiquities, Vol. II, (ser. II,) Nos. 5 and 6.

—. —. —. Science,—Vol. IV, (ser II), Nos. 1—4.

—. —. Transactions,—Science, Vol. XXVIII, Nos. 14—20.

Edinburgh. Scottish Geographical Magazine,—Vol. II, No. 2, February, 1886.

Florence. Società Africana D'Italia,—Bulletins, Vol. I, No. 6.

The Hague. Koninklijk Instituut Taal-Laud-en Volkenkunde van Nederlandsch-Indië,—Bijdragen, Vol. V, No. 1.

Havre. Société de Géographie Commerciale,—Bulletin, No. 6, November and December, 1885.

Lahore. Anjuman-i-Punjab,—Journal (English section), Vol. VI, Nos. 6—8.

London. Academy,—Nos. 716—718.

—. Athenaeum,—Nos. 3039—3041.

—. Nature,—Vol. XXIII, Nos. 847—849.

- London. Royal Astronomical Society,—Monthly Proceedings, Vol. XLVI, No. 1, November, 1885.
- . Royal Geographical Society,—Proceedings, Vol. VII, No. 12, December, 1885.
- . Royal Microscopical Society,—Journal, Vol. V (ser II), Part 6, December, 1885.
- . Royal Society,—Proceedings, Vol. XXXIX, No. 239.
- Manchester. Literary and Philosophical Society,—Memoirs, 3rd Series, Vol. VIII.
- . —. Proceedings,—Vols. XXIII and XXIV.
- Paris. Société de Géographie,—Bulletin, Vol. VI, (series VII), No. 4.
- . —. Compte Rendu des Séances,—Nos. 1—3, 1886.
- Pisa. Società Toscana di Scienze Naturali,—Atti, Processi Verbali, Vol. IV, pages 125—145.
- Rome. Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIV, Nos. 10 and 11, October and November, 1885.
- Roorkee. Indian Forester,—Vols. XI, Nos. 11 and 12; XII, No. 1; November and December, 1885 and January, 1886.
- . Professional papers on Indian Engineering,—Vol. III, (series III), No. 12, December, 1885.
- Shanghai. Royal Asiatic Society,—Journal of the China Branch, Vol. XX, No. 4.
- Vienna. K. K. Geologische Reichsanstalt,—Jahrbuch, Vol. XXXV, No. 4.
- . —. Verhandlungen,—Nos. 10—18, 1885; No. 1, 1886.
- . Zoologisch-botanische Gesellschaft,—Verhandlungen, Vol. XXXV, No. 2.
- Zagreb. Arkeologickoga Druzina,—Viestnik, Vol. VIII, No. 1.

BOOKS AND PAMPHLETS,

presented by the Authors, Translators, &c.

- DUKA, DR. TIVADAR. Körösi Csoma Sandor Dolgozatai. 8vo. Budapest, 1885.
- . THEODORE. Life and Works of Alexander Csoma de Körös. 8vo. London, 1885.
- GIBBS, JAMES. On some rare and unpublished coins of the Pathan and Mogul Dynasties of Dehli. 8vo. London, 1885.
- HAECKEL, PROF. ERNST. Die Geometrie der Radiolarien. 8vo. Jena, 1883.
- . Die Ordnungen der Radiolarien. 8vo. Jena, 1883.
- . Gesammelte Populäre Vorträge aus dem Gebiete der Entwickelungslehre, Vols. I and II. 8vo. Bonn, 1878 and 1879.

HAECKEL, PROF. Neue Gastraeaaden der Tiefsee, mit Caement-Skelet.
8vo. Jena, 1883.

_____. Studien zur Gastraea-Theorie. 8vo. Jena, 1877.

JEE, BHAGNAT SINH. Journal of a Visit to England in 1883. 8vo. Bom-
bay, 1886.

OPPERT, G. Ne Sutor ultra Crepidam :—In self-defence. 8vo. Madras,
1884-85.

MISCELLANEOUS PRESENTATIONS.

Les Récents voyages des Néerlandais à la Nouvelle-Guinée. 8vo. Versail-
les, 1985.

PRINCE ROLAND BONAPARTE.

Tagore Law Lectures, 1884-85, by Krishna Komal Bhattacharyya. 8vo.
Calcutta, 1885.

CALCUTTA UNIVERSITY.

Returns of Railway Borne Traffic during the quarter ending 30th Sep-
tember. 1885. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Draft Rules under section 24 of the Indian Steam Ship Act, VII of 1884.
Fcp. Calcutta, 1885.

Report on the Administration of Bengal, 1884-85. Fcp. Calcutta, 1886.

GOVERNMENT OF BENGAL.

Manual of the Administration of the Madras Presidency, Vol. II. Fcp.
Madras, 1885.

Report on the working of the Government Central Museum for the year
1884-85. Fcp. Madras, 1885.

GOVERNMENT OF MADRAS.

International Meteorological Observations, November, 1884. 4to. Wash-
ington, 1885.

Monthly Weather Review, October and November, 1885. 4to. Wash-
ington, 1885.

GOVT. OF INDIA—METEOR. REPORTER.

Scientific Memoirs by Medical Officers of the Army of India. Fcp.
Calcutta, 1885.

GOVT. OF INDIA—SANITARY COMMISSIONER.

Report on the Administration of the N. W. Provinces and Oudh for the
year ending 31st March, 1885. Fcp. Allahabad, 1886.

GOVERNMENT OF N. W. PROVINCES.

The Theory and Practice of Hydro-Mechanics. 8vo. London, 1885.

INSTITUTION OF CIVIL ENGINEERS, LONDON.

Irish Lexicography, by Robert Atkinson. (Todd Lecture series), Vol. II,
Part 1. 8vo. Dublin, 1885.

ROYAL IRISH ACADEMY, DUBLIN.

Meteorological Observations, July to December, 1885. Sheet. Calcutta, 1886.

ST. XAVIER'S COLLEGE, CALCUTTA.

Sailing directions and Chart of False Point Harbour by E. W. Petley, R. N. Svo. and Sheet. Calcutta, 1886.

CAPT. A. W. STIFFE, I. M.

Skeleton Map of Calcutta, town and Suburbs and Baranagore. Sheet. Calcutta, 1886.

SURVEYOR GENERAL OF INDIA.

PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries,—Vol. III, No. 29, February, 1886; and Index to Vol. II.

Berlin. Deutsche Litteraturzeitung,—Vol. VI, Nos. 46—51.

Cassel. Botanisches Centralblatt,—Vol. XXIV, Nos. 7—11.

Giessen. Jahresbericht über die Fortschritte der Chemie,—No. 5, 1883.

Göttingen. Gelehrte Anzeigen,—Nos. 22—24, 1885.

_____. Nachrichten,—No. 9, 1885.

Leipzig. Annalen der Physik und Chemie,—Beiblätter, Vol. X, No. 1.

_____. Hesperos,—Vol. IV, Nos. 109 and 110.

_____. Literarisches Centralblatt,—Nos. 47—52, 1885.

_____. Literatur-Blatt für Orientalische Philologie,—Vol. II, No. 4.

London. Annals and Magazine of Natural History,—Vol. XVI, No. 96, December, 1885.

_____. Chemical News,—Vol. LIII, Nos. 1365—1367.

_____. Entomologist,—Vol. XVIII, No. 271, December, 1885.

_____. Entomologist's Monthly Magazine,—Vol. XXII, No. 259, December, 1885.

_____. Journal of Botany,—Vol. XXIII, No. 276, December, 1885.

_____. London, Edinburgh and Dublin Philosophical Magazine,—Vol. XX, No. 127, December, 1885.

_____. Messenger of Mathematics,—Vol. XV, Nos. 5 and 6, September and October, 1885.

_____. Nineteenth Century,—Vol. XIX, No. 108, February, 1886.

_____. Numismatic Chronicle,—Part 3, 1885.

_____. Publishers' Circular,—Vol. XLIX, Nos. 1160 and 1161.

_____. Quarterly Journal of Microscopical Science,—Vol. XXVI, No. 101, November, 1885.

_____. Quarterly Review,—Vol. CLXII, No. 323, January, 1886.

_____. Society of Arts,—Journal, Vol. XXXIV, Nos. 1731—1733.

_____. Westminster Review,—Vol. LXIX, No. 137, January, 1886.

New Haven. American Journal of Science,—Vol. XXX, No. 180, December, 1885.

- Paris. Academie des Sciences,—Comptes Rendus des Séances, Vol. CI,
Nos. 19—24.
- _____. Annales de Chimie et de Physique,—Vol. VI (series 6th); De-
cember, 1885.
- _____. Journal des Savants,—November, 1885.
- _____. Revue Critique,—Vol. XX, Nos. 45—51.
- _____. Revue des Deux Mondes,—Vol. LXXIII, No. 2.
- _____. Revue Scientifique,—Vol. XXXVI, Nos. 20—25.
- Philadelphia. Manual of Conchology,—Parts 4 and 28 with coloured
Plates.
- Vienna. Orientalische Museum,—Oesterreichische Monatschrift für
den Orient,—Vol. XII, No. 1.

BOOKS PURCHASED,

- PETER CAMERON. A Monograph of the British Phytophagous Hymenop-
tera, Vol. II, 8vo. 1885.
- R. HARTMANN. Anthropoid Apes. 8vo. London, 1885.
- PETRIE W. M. FLINDERS. Second Memoir of the Egypt Exploration
Fund, Tunis, Part-I, 1883-84. London, 1885.
- Report of H. M. S. "Challenger," Zoology, Vol. XIII. 4to. London,
1885.
- TEMPLE, CAPT. R. C. The Legends of the Punjab, Vol. III, Nos. 26
and 27. 8vo. Bombay, 1886.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR APRIL, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 7th April, 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty-one presentations were announced, details of which are given in the Library List appended.

The following gentlemen duly proposed and seconded at the last meeting of the Society were ballotted for and elected Ordinary Members.

J. F. Fleet, Esq., C. S.

Bábu Rádhállabha Chaudhuri.

The following gentlemen are candidates for election at the next meeting:

1. Bábu Asutosh Mukhopádhyáy, M. A., F. R. A. S., proposed by Dr. R. Mitra, seconded by H. M. Percival, Esq.

2. Capt. E. H. Molesworth, Commandant, Police Levy, Debrugarh, Assam, proposed by E. T. Atkinson, Esq., C. S., seconded by Dr. A. F. R. Hoernle.

The following gentlemen have intimated their wish to withdraw from the Society: L. J. R. Brace, Esq., T. Gore Browne, Esq., Sir Auckland Colvin.

The PHILOGICAL SECRETARY exhibited 2 ancient copper coins sent by Rai Shyam Bahádar, Vakil, Chupra.

The PHILOLOGICAL SECRETARY read Reports on the following finds of ancient coins, *viz.* :—

I, Report on 17 coins forwarded by the Deputy Commissioner of Jhelum, with his No. 664, dated 29th Sept. 1885.

G

- 1, The find-place is not specified; somewhere in the Jhelum District.
- 2, Sixteen of the coins are of silver, mostly large thin pieces, of the weight of about 8 annas; one is a small square copper piece.

	No. of specimens.
3, They belong to the following Moghul Sultans :—	
1, I Bábar (Zahíruddín Muḥammad), A. H. 932-937 = A. D. 1526-1530; Mint and date illegible; ...	2
2, II Humáyún (Muhammad), A. H. 937-963 = A. D. 1530-1556, of slightly varying types; one speci- men dated 946; mints and dates of others not legible 	11
3, <i>Anonymous</i> , crude pieces with the Kalima on both faces 	3
4, Illegible copper piece 	1
Total, ...	<u>17</u>

II, Report on eight coins forwarded by the Deputy Commissioner of Gujrat, with his No. 1312, dated 25th Sept. 1886.

1, The coins were found buried in Mouzah Hail, Tahsil Kharian, District Gujrat.

2, Seven of them are of silver: one is a forgery, being made of copper and silvered over.

3, They are rupees of the following Moghul Sultans of Delhi :—

	No. of specimens.
1, VI, AURANGZIB, A. D. 1658-1707; Mint: Sháhjehán- ábád, date 1118, reign 49, 	1
2, XIII MUHAMMAD SHÁH, A. D. 1719-1748; of two different types: <i>viz.</i> —	
a, <i>Sahib Qirán</i> type, Mint Sháhjehánábád, dates partially legible, reigns 3, 8, 11, 15 	4
b, <i>Báddsháh Gházi</i> type; Mint illegible, dates 1153; reigns 4, 23, 26 	3
N. B.—One of the last mentioned is the forgery.	
Total,	<u>8</u>

III, Report on 104 silver coins forwarded by the Deputy Commissioner of Nimar, Central Provinces, with his No. 1026, dated Khandwáh, the 2nd July 1885.

1, The find place is not stated. It is as a rule desirable that this information should be supplied.

2, They are rupees of the following Moghul Emperors of Delhi :—

	No. of specimens.
1, V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627-1658, Mints and dates illegible; all bad specimens ...	6
2, VI, <i>Aurangzib</i> , A. H. 1068-1118 = A. D. 1658-1707; a, They are of two different types, and of various mints and dates, mostly of Súrat ... 40	
b, These are single specimens of the following five Mints: Golkondah, Aurangábád, Ajmir, Ah- medábád, Akbarnagar 5	— 45
3, VIII <i>Bahádur Sháh</i> , A. H. 1118-1124 = A. D. 1707-1712; of the following Mints: Barhánpur, Kambáyat, Akbarábád, Súrat, Bareilly; various dates 5	
4, IX <i>Jehándar Sháh</i> , A. H. 1124 = A. D. 1712; Mint: Khujastah Banyád, date 1124, reign 1 ...	1
5, X <i>Farrokh Sir</i> , A. H. 1124-1131 = A. D. 1712-1719; of two different types, and of various mints (mostly Súrat) and dates 17	
6, XII <i>Rafí'uddaulat</i> or <i>Sháh Jehán II</i> , A. H. 1131 = A. D. 1719; Mint: Mustaqir ul Khiláfat Akba- rábád; date 1131, reign 1 1	
7, XIII, <i>Muhammad Sháh</i> , A. H. 1131-1161 = A. D. 1719-1748; of two different types, and of various Mints (mostly Súrat and Barhánpur) and dates ... 29	
Total, ...	104

IV, Report on a gold coin, forwarded by the Collector of Nuddea, with his No. 2246G., dated Krishnagar, the 29th October 1885.

1, The coin was found in the Ranaghat Subdivision.

2, It is not a Burmese coin with the figure of Buddha, as described in the Collector's letter, but one of Nára Gupta, an ancient ruler of Bihár and Bengal. His exact date and allocation is still uncertain; but he is certainly one of the later Gupta line, and cannot be placed earlier than A. D. 400, if the end of the second century be accepted as the initial epoch of the rise of the earlier Gupta line.

3, This type of coin is fully described in the Journal of the As. Soc. Bengal, Vol. LIII, Part I, p. 201.

Obv. Figure of king to left, bow in l., arrow in r. hand, and bird standard, as in the "archer" coins of the earlier Chandra Gupta. Under the left arm, the letter ना *nára*; between the legs गु *gu*. Around the

margin there appears to have been a legend, which is almost entirely clipped away.

Rev. Goddess (Lakshmi) on lotus flower seat, with flower in l., and fillet in r. hand. Legend: बालादित्य *báláditya*.

V, Report on 32 coins, forwarded by the Deputy Commissioner of Raipur, with his No. 4712, dated 9th Oct. 1885.

1, They were "found in a wall of a house which was being pulled down at Dhamtari" in the Raipur District. They are all of silver.

2, They belong to the following Moghul Sultans of Delhi:—

	No. of specimens.
1, V. <i>Sháh Jehán</i> , A. H. 1037-1068=A. D. 1627-1658; Mints: Súrat, Lahor; reign (on one) 31; bad specimens 3	
2, VI. <i>Aurangzib</i> , A. H. 1068-1118=A. D. 1658-1707; of various Mints (Patna, Súrat, Etáwah, Bíjapur, Kaçák, etc.) and dates (1091 ¹ , 1100 ¹ , 1106 ² , 1111 ¹ , 1112 ²); indifferent specimens 16	
3, X, <i>Farrokh Sér</i> , A. H. 1124-1131=A. D. 1712-1719; Mint; illegible; date 1130, reign 7; indifferent specimen 1	
4, XIII, <i>Muhammad Sháh</i> , A. H. 1131-1161=A. D. 1719-1788; various Mints (Shájhéhánábád, Mur- shidábád, etc.) and dates (1131 ¹ , 1133 ¹ , 1137 ¹ , 1138 ¹); indifferent specimens 12	
Total, 32	<hr/> <hr/>

VI, Report on 41 coins forwarded by the Collector of Hooghly with his No. 1759, dated 20th February 1886.

1. The coins were found in Khas Mehal Belcooli, Moujah Chuckerbéria, Thana Sibpore, District Howrah.

2. They are all Rupees of the Emperor Sháh Alum, who reigned from A. H. 1173, A. D. 1759. They were all minted in Murshidábád, but are of various dates, which do not always agree with the numbers of the regnal years; thus:—

		No. of Specimens.
1, date 1184, reign 11 correct	...	2
2, date 1885, reign 12, correct	...	9
3, date lost; reign 12, probably correct	...	10
4, date 1192, reign 19, correct	...	13
5, Reign 12, but dates 1186, 1187, 1188, incorrect	...	7
Total,	...	41

VII, Report on four copper coins, forwarded by the Divisional Magistrate of Mirzapur, with his No. 67, dated 29th October 1885.

xvii

1, The find place is not stated. All four are of copper, of the size of a two-anna piece.

2, They belong to the following sovereigns :

	No. of Specimens.
I, 'Aláuddín Muḥammad Sháh, Sultan of Delhi from A. H. 695—715 = A. D. 1295—1315. Described in E. Thomas' "Chronicles," p. 172 (No. 136); date illegible 1	1
II, Ibráhím Sháh Sharqí, Sultan of Jaunpur, from A. H. 804—844 = A. D. 1401—1440. Described in E. Thomas' "Chronicles," p. 321 (No. 2); dates : 831, 832, and 825 (?) 3	3
Total, 4	4

VIII Report on 16 gold and 457 silver coins forwarded by the Secretary to Government, N. W. Provinces and Oudh, Financial Department, with his No. 702 of the 12th Feb., 1886.
 $\times 52$

These coins consist of the following collections :

- 1, 141 silver coins, found in the Etáwah District. They all belong to the class of ancient Hindú or Buddhist punched coins. The punches on most of them are almost entirely worn away.
- 2, 25 silver coins, found in Partábgarh District. They belong to the following (so-called) Pathan Sultans of Delhi.
 - a, VIII 'Aláuddín Mas'aúd, A. H. 639—644, = A. D. 1241—1246, Mint and date illegible; specimens 3
 - b, IX Násiruddín Mahmúd, A. H. 644—664 = A. D. 1286—1265; Mint and date illegible; specimens 19

c, X <i>Ghiyásuddín Balban</i> ; A. H. 664—686 = A. D. 1265—1287; Mint and date illegible; specimens	2
d, XI <i>Muizzuddín Kaikobád</i> ; A. H. 686—689 = A. D. 1287—1290; Mint and date illegible; specimen	1
	<u>—</u>
Total, ...	25
	<u>—</u>
3, 45 silver coins, found in Partágarh, Agra District; all belonging to Sultan Sháh Alam of Delhi, and of the mint Akbarábád. They are of two different types, both described by Marsden, in his <i>Numismata Orientalia</i> , pp. 689, 695; and of varying dates, from 1198 up to 1219.	
4, 25 silver coins found in the Banda District. They are all Rupees of the Emperor Sháh Alam, struck at Banda and dated 39 of his reign.	
5, 53 silver coins found in the Basti District. They belong to the following Pathan Sultans of Delhi:	
a, 'Aláuddín Muhammád Sháh, A. H. 695—715 = A. D. 1295—1315, of the two mints: Darul Islám and Hasrat Dehli, and of various dates ...	51
b, <i>Muizzuddín Kaikobád</i> , A. H. 686—689 = A. D. 1287—1290	2
	<u>—</u>
Total, ...	53
	<u>—</u>
6, 4 silver coins from the Agra District. They are all Rupees of the Emperor Sháh Alam; mint Akbarábád; date 1218, reigns 42, 44, 45.	
7, 9 gold coins from the Partágarh District. They are so-called Ramtinkis, very small, and slightly convex. On one side the surface is smooth; the other (concave) side bears the following symbols; in the middle a star (or sun) with eight rays; below it a conch shell, above it the legend <i>Shri Ráma</i> in rude letters; on both sides a scroll or coil.	
8, 7 gold coins from Rae Bareilly. They are all Gupta coins; viz., a, <i>Ghaṭotkacha</i> , solar standard type, J. A. S. B., Vol.	
LIII, Pl. II, fig. 1,	1
b, <i>Chandra Gupta</i> , I, Queen and King type, <i>ib.</i> , Pl. II, fig. 2	1
c, <i>Samudra Gupta</i> , Javelin type, <i>ib.</i> , Pl. II, figs. 3, 5	5
	<u>—</u>
Total,	7
	<u>—</u>
9, 164 silver punched coins, from Ballia; all in extremely worn condition.	

The SECRETARY laid upon the table a book entitled "De L'Influence des Religions sur le développement économique des Peuples. Par Louis Desgrand, Président-Fondateur de la Société de Géographie de Lyon." The Secretary to the Geographical Society of Lyons, in forwarding the work, stated that his Society would be happy if any member of the Asiatic Society would undertake an analagous labour with regard to the religions of India.

The PRESIDENT remarked that the best way to meet the wish of the Geographical Society of Lyons would be to announce it in the Proceedings.

The following papers were read—

1. *On some snow measurements at Kailung in Lahoul.—By the Rev. A. W. HEYDE. Communicated by H. F. BLANFORD, Esq., F. R. S.*

The only satisfactory mode of estimating the amount of water precipitated from the atmosphere in a snow-storm is to collect the snow that falls on a determinate superficial area, melt it, and measure (or weigh) the resulting water. In many cases this may be done with an ordinary rain-gauge, the snow being collected in the same manner as rain, in the funnel of the gauge, whence after melting, either spontaneously or by artificial heating, the water passes into the receiver and may be measured in the same manner as rain-water. But when the fall is very copious, and the temperature too low to allow of its melting on contact with the gauge, it may sometimes fill the funnel and form a mound on the top, after which, any further accumulation is lost either by its falling around or by its being blown away. It is therefore a question of some importance to know how much water is the equivalent of a given thickness of snow, in other words what is the depth of a layer of water that results from the melting of, say, a layer of snow one foot thick. Supposing this question to be susceptible of a definite answer, in the absence of any more satisfactory measurement, the thickness of a fall of snow (of course where undisturbed and not drifted) may be taken as the datum, converted into its water equivalent, and so registered in the register of the rainfall.

One of the earliest observers who gave attention to this subject was Musschenbroek,* who in his 'Introductio ad philosophiam naturalem' published at Leyden in 1762, gives results so discordant, that it might seem hopeless to seek for any ratio of practical value. He found that the density of snow varies, according to its state of accumulation from $\frac{1}{4}$ to $\frac{1}{2}$ that of water. These, however, are extreme results; and, as such, certainly of rare occurrence, and it may still be possible by taking some simple precautions to measure the snow under such conditions, that, assuming an average ratio for its conversion into the water equivalent,

* I quote this from Kaemitz and Schmidt, the original work not being accessible.

the result may be sufficiently near the truth to serve as an useful meteorological datum. The chief precautions are to measure it as soon as possible after the fall, in a place where the ground is level and the snow not drifted. Under these circumstances it is assumed by most observers to be either $\frac{1}{10}$ or $\frac{1}{12}$ the density of water, and either 10 inches of snow-fall (or 12 inches) are entered in the register as equal to 1 inch of rainfall. Drew in his 'Practical Meteorology' inculcates the former, Scott in his 5th Lecture on Modern Meteorology the latter, ratio.

In India it is only at the Himalayan observatories that the question has a practical importance, but these have been increased in number of late years, and it seemed very desirable to test the ratio of snow-thickness to water-thickness by actual experiment, if an observer would volunteer, endowed with those qualities of carefulness and accuracy in observing physical phenomena, which are unfortunately so rare in India, but which are the *sine qua non* of any useful work. Fortunately such an observer offered himself in the Rev. A. W. Heyde, the Director of the Moravian Mission in the N. W. Himalaya, whose residence at Kailung in the Chandra Bhaga valley, north of the Rotang pass at an elevation of 10,500 feet above the sea, and in a place where the winter snowfall is frequent and copious, afforded all the desired conditions for the work.

Mr. Heyde has now carried on his observations through two winters and the results, which he has communicated to me, are of such interest and so fully justify the adoption of the method when followed with care and intelligence, that it is most desirable to make them widely known through the medium of the Society.

A level space in front of Mr. Heyde's house is cleared of snow after each fall has been measured, and thus made ready for the next fall. The measurements have been made by Mr. Heyde himself and in the following manner. "First the depth of the snow was measured, then it was cut out with the rain-gauge funnel,* or its cylinder, of the same diameter as the funnel, melted, and the water obtained measured with the measure-glass."

In the first winter the depth of the snow appears to have been only roughly measured, and as might be anticipated the resulting measurements of the water are by no means so consistent as those of the second winter. It seems probable that on the whole the thickness of the snow was rather over-estimated. The figures are as follow:—

* The rain-gauge furnished to Mr. Heyde is that known as Glaisher's pattern the funnel 8 ins. in diameter, the mouth being surmounted by a cylinder for the purpose of catching snow. By some mistake the measure-glass originally sent with this gauge was one adapted for a 5-inch gauge, and the measurements of the 1st winter were made with this. In the text they have been reduced to the real amounts by multiplying the quantities as registered by 0.39.

Date.	Depth of snow.	Snow water.	Date.	Depth of snow.	Snow water.
Jan. 6th	About 5 ins.	0·35 in.	February 3rd	About 3 ins.	0·24 ins.
," 7th	" 30 "	2·19 "	4th	" 6½ "	0·51 "
," 8th	" 25 "	1·92 "	5th	" 13 "	1·01 "
," 9th	" 32½ "	2·48 "	8th	" 2 "	0·15 "
," 16th	" 4½ "	0·27 "	14th	" 2½ "	0·16 "
," 23rd	" 5 "	0·31 "	21st	" 8 "	0·69 "
," 24th	" 6 "	0·41 "	March 3rd	" 2 "	0·15 "
," 26th	" 6 "	0·41 "	5th	" 1½ "	0·10 "
," 28th	" 7 "	0·56 "	6th	" 1½ "	0·09 "
			12th	" 1½ "	0·12 "

The totals of the above figures are $162\frac{1}{2}$ inches ($= 13$ ft. $6\frac{1}{2}$ inches) of snow and 12·12 inches of snow water. Hence on the average 1 foot of snow yielded 0·9 inch of snow water, or one inch of water corresponds to $13\frac{1}{4}$ inches of snow.

In the second year the measurements of the snow were made with greater exactitude, and the snow that fell into the gauge was melted and measured independently. These measurements are given in the right hand column in the following table, and it is interesting to note how close is the agreement of the two measurements.

Date.	Depth of snow cut out.	Cut out melted A.	Computed B.	Difference.	Collected in gauge C.
Dec. 17th 1885	2½ ins.	0·19 ins.	0·20 ins.	+ 0·01	?
," 18th "	4½ "	0·35 "	0·40 "	+ 0·05	?
," 19th "	1½ "	0·15 "	0·15 "	0	?
Jan. 4th 1886	3¼ "	0·27 "	0·30 "	+ 0·03	?
," 12th "	2½ "	0·18 "	0·20 "	+ 0·02	0·185
," 17th "	½ "	0·04 "	0·04 "	0	?
," 19th "	19½ "	1·92 "	1·77 "	- 0·15	1·88
," 20th "	6½ "	0·65 "	0·61 "	- 0·04	0·64
," 22nd "	1½ "	0·15 "	0·14 "	- 0·01	0·13
," 24th "	3 "	0·24 "	0·27 "	+ 0·03	0·28
," 31st "	3¼ "	0·25 "	0·29 "	+ 0·04	0·22
Feb. 1st "	6½ "	0·57 "	0·57 "	0	0·61
," 16th "	4 "	0·38 "	0·36 "	- 0·02	0·38
," 17th "	6 "	0·55 "	0·55 "	0	0·60
," 27th "	2½ "	0·23 "	0·23 "	0	0·23
," 28th "	¾ "	0·05 "	0·06 "	+ 0·01	0·05
Mar. 7th "	1½ "	0·13 "	0·11 "	- 0·02	0·13
," 8th "	1½ "	0·10 "	0·10 "	0	0·10

The total depth of snow shewn by the second column is 70·36 inches the total depth of water resulting therefrom and given in the third column 6·40 inches. Hence 11 inches of snow yielded 1 inch of water almost exactly. The 4th column is computed from the individual snow measurements on this assumption, and the 5th column shews the errors of the computed values. The 6th column gives the quantities caught in the rain-gauge and separately melted and measured. It will be seen that in only one case do these differ by more than 0·05 inch from those in column 3.

In the letter communicating the above data Mr. Heyde observes: "If the snow falls without the least wind, and dry, the quantity of snow-water from the snow cut out and from the snow caught in the rain-gauge is always the same. But first the measuring of the snow, then the cutting it out, the taking the snow from the funnel of the rain-gauge and putting both in two separate vessels, and lastly, the melting and pouring the water into the measuring glass, must be done very carefully. If all these conditions are not fulfilled, it is only natural that a small difference will occur."

2. On three new Himalyan Primulas.—By G. KING, Esq., M. B. LL. D., F. L. S.

The paper will be published in full in Part II of the Journal for 1886.

The PRESIDENT in announcing the death of Mr. Edward Thomas, late of the Bengal Civil Service, and an old and valued member of this Society, desired to place on record the following summary of Mr. Thomas' service in India and his contributions to Indian Numismatics and Archaeology:—Edward Thomas was appointed a writer on the Bengal establishment in April 1832, and arrived in India in the following November. He must have even then devoted himself to Oriental studies, for in December of the same year he received the medal for proficiency in Persian. In April 1833 he was appointed to the Meerut division of the N. W. Provinces and served during the same year in Kumaon under Mr. Traill. At the end of the year he was posted to Bareilly, where he remained until November 1837 when he was transferred to Saháranpur and took his first furlough at the close of 1838. Returning to India in 1840 Mr. Thomas was employed in Aligarh and again in Saháranpur, but his health breaking down he was obliged to take furlough early in 1845 and did not return to India until 1850. We next find him as Judge of Ságár in the Central Provinces, whence he again took leave in August 1854, and resigned the Service in February 1857, after a residence

in India of a little less than sixteen years. Completely broken in health but in the full possession of mental vigour, Thomas devoted the remainder of his life to the cause of Oriental numismatics and Archaeology. In 1858, he brought out at Austin's Hertford press an edition of Prinsep's Essays which leaves nothing to be desired in the mode of editing and is full of valuable notes and illustrations by Thomas himself. Later still he undertook to edit the international edition of Marsden's *Numismata Orientalia*, besides contributing papers to the Journal of this Society and those of the sister Societies of London and Paris and that of the Numismatic Society. Our Vice-President, Dr. Rájendralála Mitra, had the advantage of a personal acquaintance with Mr. Thomas, and I call on him to speak of those traits of character which have endeared Mr. Thomas to those who knew him; his accurate, careful and conscientious scholarship and the modest judicial tone of his writings. Appended to this notice will be found a list of his principal contributions, especially those which he collected together under the title "Miscellaneous Essays," and which apparently contain the papers which he thought to be of most permanent value.* This list will give a fair idea of the range and extent of his labours, but a perusal alone of the works themselves will show what care and thought were bestowed on their production.

*Journal of the Royal Asiatic Society, London.
Old Series.*

On the coins of the dynasty of the Hindu kings of Kábul	IX p. 177 (1848).
On the coins of the kings of Ghazni	IX, p. 267 (1848).
On the dynasty of the Sáh kings of Sauráshtra ...	XII, p. 1 (1850).
The Pehlvi coins of the early Muhammadan Arabs	VII, p. 253 (1850).
Notes introductory to Sassanian mint monograms and gems, with a supplementary notice on the Arabico-Pehlvi series of Persian coins	XIII, p. 373 (1852).
Supplementary contribution to the series of the coins of the kings of Ghazni	XVII, p. 138 (1860).
*On Bactrian coins	XX, p. 99 (1863).

New Series.

*On the identity of Xandrames and Krapanda	... I, p. 447 (1863).
*The Initial coinage of Bengal, Pt. I	... II, p. 145 (1866).
Sassanian inscriptions	... III, p. 241 (1868).
*Indo-Parthian coins	... IV, p. 503 (1870).

* These papers are marked with an asterisk in the list and are published by Trübner & Co.

- Comments on recent Pehlvi decipherments with an incidental sketch of the derivation of Aryan alphabets and contributions to the early history and geography of Tabaristán V, p. 408 (1871).
- *The Initial Coinage of Bengal, Pt. II. ... VI, p. 339 (1873).
- Note on a jade drinking-vessel of the Emperor Ja-hángrír ... VII, p. 384 (1875).
- Bactrian coins and Indian dates ... IX, p. 1 (1877).
- The early faith of Asoka ... IX, p. 155 (1877).
- The rock-cut Phrygian inscriptions at Doganlu ... X, p. 361 (1878).
- On the position of women in the East in olden time XI, p. 1 (1879).
- The epoch of the Guptas ... XIII, p. 524 (1881).
- Parthian and Indo-Sassanian coins ... XV, p. 73 (1883).
- The rivers of the Vedas and the way the Aryans entered India ... XV, p. 357 (1883).

Numismatic Chronicle and Journal of the Numismatic Society, London.
Second Series.

- *Bactrian coins (1 ser.) xix : (2 ser) ... II, pp. 179, 259 (1862).
IV, p. 193 (1864).
- Bactrian alphabet ... III, p. 225 (1863).
- Ancient Indian weights ... IV, pp. 40, 114 (1864).
- *The earliest Indian coinage ... IV, p. 263 (1864).
- Bengal coins ... V, p. 217 (1865).
- *Sassanian gems and early Armenian coins, ... VI, p. 241 (1866).
- VII, pp. 141, 216 (1867); VIII, pp. 214, 284 (1868) XI, p. 202 (1871).
- *Indo-Parthian coins ... X, p. 139 (1870).

Third Series.

- Bilingual coins of Bukhárá ... I, p. 116 (1881).

Journal of the Asiatic Society Bengal, Calcutta.

- *On Sassanian coins ... XX, p. 525 (1851).
- An account of eight Kúfic silver coins ... „, p. 537 (1851).
- Note on Col. Stacey's Ghazni coins ... XXI, p. 115 (1852).
- Note on the present state of the excavations at Sár-náth ... XXXII, p. 469 (1854).
- On the epoch of the Gupta dynasty ... XXIV, p. 371 (1855).
- *On the coins of the Gupta dynasty ... „, p. 483 (1855).
- *Ancient Indian numerals ... „, „, p. 551 (1855).
- Catalogue of the coins in the cabinet of the late Col. Stacey, with estimated prices attached XXVII, p. 251 (1858).

- *On ancient Indian weights ... XXXIII (i) p. 251 (1864).
 XXXIV (i) pp. 14, 151 (1865).
 On double currency Proc. p. 208, (1865.).
 On Arian alphabets ... Proc. p. 138, (1866) : p. 38, (1867).
 *The initial coinage of Bengal ... XXXVI (i) p. 1 (1867).
 XLII, p. 343 (1873).
 On a coin of Plato Proc. p. 174, (1872).
 Readings of rare Bengal coins „ p. 199, (1872.).
 On a coin of Krananda „ p. 163, (1875).
 Note on Jainism „ p. 1, (1879).
 The revenues of the Mughal empire L, p. 147 (1881).

Journal Asiatique, Paris.

- *Note on Indian Numerals No. 8 (1863).
 *Observations introductory to the explanation of the oriental legends to be found on certain Imperial Arsacidan and Partho-Persian coins. London, 1849.
 *Contributions to the Numismatic history of the early Mohammedan Arabs in Persia. London, 1849.

Dr. MITRA spoke as follows :

As an old member who had had the pleasure of Mr. Thomas's acquaintance before he retired from India, and one who took a deep interest in his antiquarian researches—researches to which I have devoted a great part of my life,—I desire to bear my humble testimony to his worth, and to express my sense of the loss which the cause of Indian antiquities has sustained by his death. After what has fallen from the chair, it is not necessary for me to attempt a sketch of the life of the deceased. The history of his official career in this country is well-known to his friends, and to others it is enough to say that it had the usual run of the career of most Civil Servants. He joined the Society as an Ordinary Member in August 1839, or within six years of his arrival in this country, and was elected an Honorary Member in 1860. The special subject he had selected for his study was numismatics, and his first contribution, in the form of a monograph of the Hindu Kings of Kábul, appeared in the Journal of the Royal Asiatic Society in 1848. This was followed by a note on the coins of the kings of Ghazni and then by an elaborate paper on the Sháh kings of Sauráshtra. These papers show the deep knowledge he possessed of the subjects

to which they were devoted, and the calm, critical, and judicial spirit he brought to bear on his work. Prinsep and Wilson had already described a good many of the coins he noticed, and had cleared the way for further research; nevertheless, much credit was due to him for his essays, and they at once established his reputation as an able and careful worker. His first contribution to our Journal appeared in 1850. It described an Indo-Pehlvi coin, and it was followed by several papers on coins, the most remarkable of which were those on the mintages of the Pathan Sultans of Bengal. These were founded on a number of select specimens from a large find in Cutch Behar, which Colonel Guthrie took to England, and they brought to light several names which, till then, were all but totally unknown to Indian history. They helped also to settle the dates of several of the Bengal Sultans,—dates which, till then, were unknown or incorrectly given by Muhammadan historians. To the Journal of the Royal Asiatic Society he contributed papers on Indo-Parthian or Bactrian coins, as also translations of several Phrygian and Sassanian inscriptions. His searching and scholarly examination of the last named records is worthy of special note. Pehlvi and Sassanian palaeography is still in an immature state, and when Mr. Thomas took it up it was in its infancy. Very few scholars had tried to grapple with it, and the result, till then, was anything but satisfactory. But his deep and critical knowledge of the Persian language and thorough antiquarian instinct enabled him to render valuable services in this almost new field of research.

While at Benares, Mr. Thomas devoted his attention to the Sarnath Tope, and his paper on the subject appeared in our Journal for 1854. It was a welcome contribution then, but the later researches of General Cunningham have now taken off from it some of the charms of novelty.

As a numismatist he could not but pay earnest attention to Indian palaeography, and wrote several notes on the origin of the Indian alphabets and ancient numerals, some of which appeared in our Journal, and others in the Royal Asiatic Society's Journal and in the *Journal Asiatique*. The problem is a most difficult one to deal with, and I cannot say, that, notwithstanding the researches of later writers, we have yet arrived at a satisfactory solution of it; but high praise was due to Mr. Thomas for the able and scholarly way in which he tried to work it out.

His numismatic researches enabled Mr. Thomas to collect much valuable information regarding the currency and revenue of the Moghul Emperors of Delhi, and they are embodied in an essay on the 'Revenues of the Moghul Empire in India,' which is alike noted for the depth of research and the vast variety and authenticity of the facts produced.

His essays on the era of the Guptas is a paper of this class, and it is replete with information of great value.

Apart from strictly numismatic subjects he wrote learned papers on 'Jainism,' 'On the Position of Women in the East in Olden Times,' 'On the Early Faith of Aśoka,' 'On the Rivers of the Vedas,' and 'On the Way the Aryans entered India.' They all bear the stamp of a scholar, who always thought and wrote for himself, and never accepted the statements of his predecessors and contemporaries without examination and verification. By far the most important work published by Mr. Thomas was the 'Chronicles of the Pathan Kings of Delhi, illustrated by Coins, Inscriptions, and other antiquarian remains.' It is a standard work of reference, without which no student of Indian history can get on. He did also an important service to the Society by bringing out in an acceptable and handy form the antiquarian essays of James Prinsep, which were originally published in the earlier volumes of our Journal; and were for some time not easily accessible. They were enriched by valuable notes and appendices, which brought them up to date. His last undertaking was the 'International Numismata Orientalia.' Marsden's work being long out of print and to a certain extent having become obsolete by reason of subsequent discoveries, a new edition was called for, and Mr. Thomas undertook the task with the aid of a large staff of able and experienced coadjutors. The first fasciculus of this work appeared some time ago, and it contained an exhaustive essay on Indian Weights and Measures from his pen. The subsequent fasciculi were prepared by his collaborateurs, his task being limited to editing only. It was expected that he would write out the part referring strictly to Indian coins, both Hindu and Muhammadan, and no one could have done greater justice to it. He was of a very retiring disposition, and never put himself forward. Those, however, who were best able to appreciate his merits, held him in high esteem, and the Society cannot but greatly regret the loss it has sustained by his demise.

The subject for conversation by the Philological Secretary was—

"Manikhyala, and a gold ornament made of Roman coins recently found there."



LIBRARY,

The following additions have been made to the Library since the meeting held in March last.

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presented by the respective Societies and Editors.

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- Bombay. Royal Asiatic Society (Bombay Branch),—Journal, Vol. XVI, No. XLIII.
- Copenhagen. K. Nordiske Oldskrift-Selskab,—Aarbøger, Part IV, 1885.
- Edinburgh. Botanical Society,—Transactions and Proceedings, Vol. XV, Part II.
- Edinburgh. Scottish Geographical Magazine.—Vol. II, No. 3, March, 1886.
- Edinburgh. ditto ditto Title page and Index, Vol. I, 1885.
- Frankfurt. Senckenbergische Naturforschende Gesellschaft,—Bericht, 1885.
- Geneva. Société de Physique et d'Histoire Naturelle,—Mémoires,—Vol. XXIX, Part 1.
- Havre. Société de Géographie Commerciale,—Annuaire pour l'année 1885.
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- London. Atheneum, Nos. 3042—3045.
- London. Institution of Mechanical Engineers,—Proceedings, No. 5, October, 1885.
- London. Nature, Vol. XXXIII, Nos. 851—854.
- London. Royal Asiatic Society,—Journal, Vol. XVIII, (new series) Part I, January, 1886.
- London. Royal Astronomical Society,—Monthly Notices, Vol. XLVI, No. 2, December, 1885.
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- Moscow. Société Impériale des Naturalistes,—Bulletin, No. 4, 1884.
- New Haven. American Oriental Society,—Proceedings, October, 1885.
- Paris. Americana Bulletin du Bouquiniste,—Series 4, No. 3.

- Paris. Société de Géographie,—Compte Rendu des Séances, Nos. 4 and 5, 1886.
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- St. Petersburg. Russian Geographical Society,—Proceedings, Vol. XXI, No. 3.
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MISCELLANEOUS PRESENTATIONS.

Report on the Agri-Horticultural Gardens, Lahore, for 1883-84 and 1884-85. Fcp. Lahore, 1884 and 1885.

AGRI-HORTICULTURAL GARDENS, LAHORE.

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BATAVIAASCH GENOOTSCHAP VAN KUNSTEN EN WETENSCHAPPEN, BATAVIA.

Catalogue of Indian coins of the Greek and Scythic Kings of Bactria and India in the British Museum, by Reginald Stuart Poole, LL. D. 8vo. London, 1885.

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Review of the Agricultural and Revenue Reports of the Central Provinces for the year 1884-85. Fcp. Nagpur, 1886.

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A. DESGODINS, PRO VICAIRE DU THIBET.

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Report on the River-borne Traffic of the Lower Provinces of Bengal, on the Inland Trade of Calcutta, and on the Trade of Chittagong and Orissa Ports for the year 1884-85. Fcp. Calcutta, 1886.

Returns of the Rail-borne Traffic of Bengal during the quarter ending the 30th September, 1885. Fcp. Calcutta, 1886.

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Excursions et Reconnaissances :—a collection of official and other papers on French Cochinchina. No. 25, January and February, 1886. 8vo. Saigon, 1886.

GOVERNMENT OF FRENCH COCHIN CHINA, SAIGON.

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De L'Influence des Religions sur le Développement Economique des Peuples. Simple Étude. Par Louis Desgrand. Demi 8vo. Paris, 1884.

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Enlarged Photograph of the Kutb Minar at Delhi. Sheet, 1886.

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Lt.-COL. J. WATERHOUSE, B. S. C.

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Allahabad. Punjab Notes and Queries,—Vol. III, No. 30, March, 1886.
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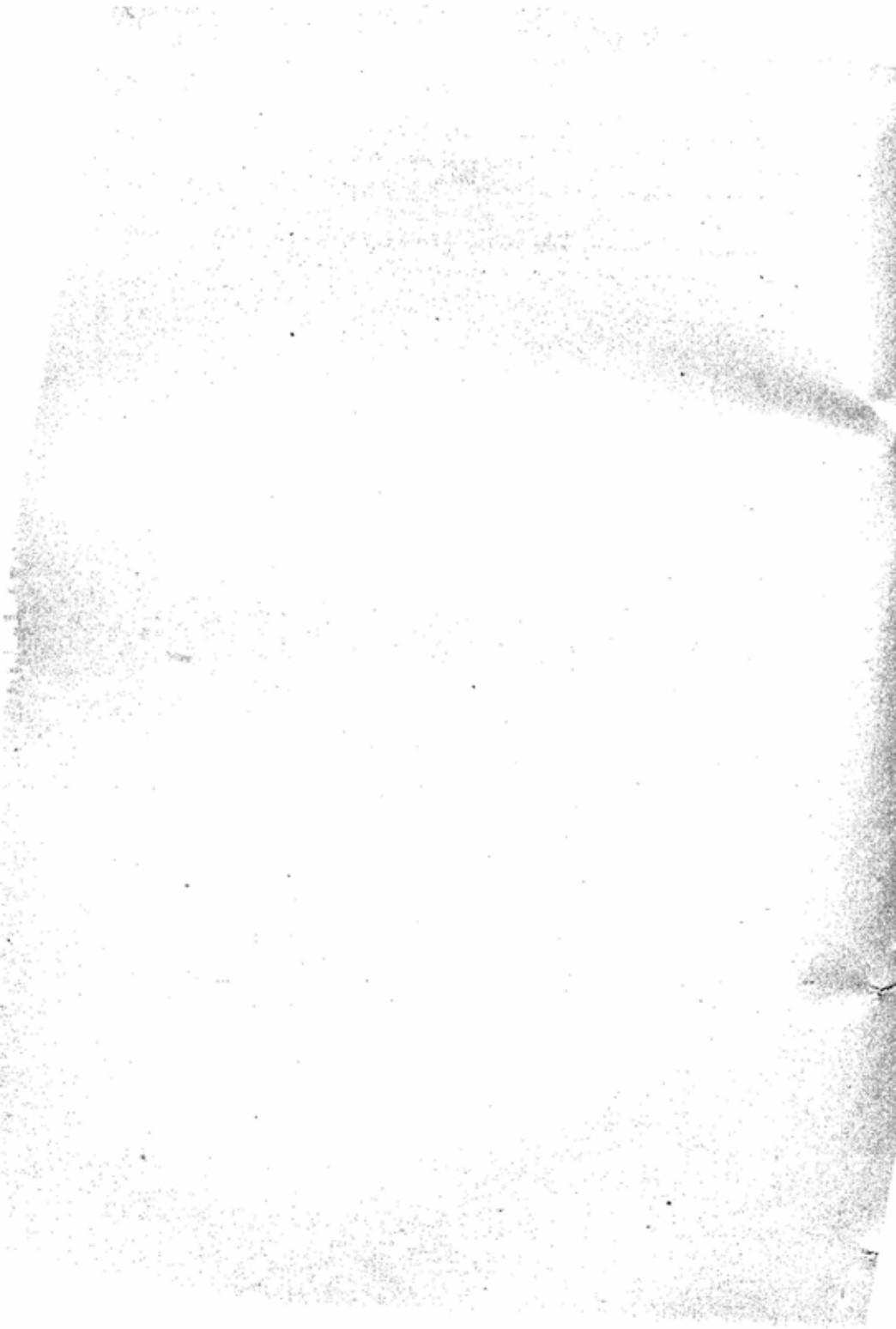
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- DUMONT, REV. J. B., S. J. Synoptical Tables of Modern Chemistry, Vol. I. Inorganic Chemistry. 8vo. Calcutta, 1884.
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NOTICE.

Foreign Societies who favour the Asiatic Society of Bengal with their publications are informed that they may be sent either to the address of the Society at Calcutta, or to the Agents of the Society in London, Messrs. Trübner & Co., 57 and 59 Ludgate Hill, London.

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Des Sociétés Etrangères qui honorent la Société Asiatique de Bengale de ses publications, sont averties par là, qu'ils peuvent les envoyer ou directement à l'adresse de la Société, 57, Park Street, Calcutta, ou aux Agents de la Société à Londres, Messrs. Trübner et Cie, 57 and 59 Ludgate Hill.

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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR MAY, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 5th May, 1886, at 9-15 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The Minutes of the last meeting were read and confirmed.

Seventeen presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members :

1. Babu Asutosh Mukhopádhyáy, M. A., F. R. A. S.
2. Capt. E. H. Molesworth, Commandant Police Levy, Dibrugarh, Assam.

The following gentlemen are candidates for election at the next meeting :—

1. C. Baumgarten, Esq., Batavia, proposed by Dr. A. F. R. Hoernle, seconded by H. M. Percival, Esq.
2. P. Doyle, Esq., Editor, Indian Engineer, proposed by J. Holdsworth-Fisher, Esq., seconded by Dr. Mahendralál Sarcár.
3. A. Macdonald, Esq., Editor, Englishman, proposed by J. Wood-Mason, Esq., seconded by H. B. Medlicott, Esq.
4. Alexander Hogg, Esq., Supdt. Police, proposed by Dr. Hoernle, seconded by H. M. Percival, Esq.

The following gentlemen have intimated their wish to withdraw from the Society :

Maulavi Dilawar Hussein Ahmed.

Maulavi Kabiruddin Ahmed.

The PHILOLOGICAL SECRETARY read the following report on an ornament of gold Roman Coins found in the Manikyála Tôp in the district of Rawal Pindi:—

Report on an ornament of ancient gold coins forwarded by the Deputy Commissioner of Rawal Pindi with his No. 478 G, dated 9th March 1886.—By DR. A. F. RUDOLF HOERNLE.

The gold ornament was found by a peasant of the Tôp Manikyála village (Police Station, Riwat), while ploughing his field, about the 25th July 1885. It was on the 1st August taken charge of by the local Inspector of Police, and made over by him to the Offg. District Superintendent of Police, Rawal Pindi, and by the latter, together with a report on it, to the Deputy Commissioner of Rawal Pindi. Afterwards, by the direction of the Commissioner of Rawal Pindi, it was forwarded to the Deputy Commissioner of Amritsar, in order to be submitted to Mr. C. J. Rodgers of Amritsar for his opinion. The latter gentleman gave his report on the ornament on the 25th Nov. 1885, whereupon it was purchased by Government at the value of Rs. 150 and ordered, by the Commissioner of Rawal Pindi, to be forwarded to the Asiatic Society of Bengal for the usual Report, in conformity with the recent resolution of the Government of India relating to treasure trove consisting of coins.

The ornament consists of five gold coins set at small intervals in a row between two pieces of stout gold wire, of the length of about $5\frac{1}{2}$ inches. The interstices between the coins are filled in with very thin plates of gold, showing traces of having been once mounted with gems or enamel. The whole is finished off at both ends with a narrow band of gold, to which at one end a small tube of gold is attached, about $\frac{1}{4}$ inch long and $\frac{1}{2}$ inch wide. At the other end, there was probably a similar tube, which, however, is now lost. The breadth of the whole ornament is nearly one inch. It is now considerably bent and twisted out of its original shape.

In the report of the District Superintendent of Police, the ornament is described as a "necklet," while Mr. Rodgers, in his report, describes it as a "bracelet." The latter description is certainly incorrect, for though the ornament is, as Mr. Rodgers, says "of the length of a bracelet for an ordinary lady's arm," the make of it is much too inflexible to allow of its being worn round the wrist. The description of it as a necklet assumes that only one half of the ornament has been found, and that it originally consisted of a second, similar piece, joined to the

other by hinges, which allowed the whole ornament of being opened to be adjusted to the neck. This is possible, though still the ornament would rather be a collar than a necklace, and a very stiff and uncomfortable one too, more fitted for an animal than a human being. I am disposed to think, that the ornament was an armlet, such as is worn on the upper arm, encircling only its anterior half and tied behind the arm by means of a string or ribbon. This would account for the wide tubes attached to the ends of it, which were intended to hold the string or ribbon. In this view, the ornament is complete, with the exception of one of the two tubes, which is broken off.

The District Superintendent of Police of Rawal Pindi identified the coins as belonging, three to Antoninus Pius, and two to his wife Faustina. Mr. Rodgers, on the other hand, attributed them, one to Hadrian, two to Sabina, and two to Antoninus Pius. Notwithstanding the "most careful examination" of the latter gentleman his identification is entirely wrong, while the original identification by the District Superintendent of Police is correct. Mr. Rodgers' error probably arose from the fact that one of the coins shows the name Hadrian, and as Hadrian's spouse was called Sabina, Mr. Rodgers seems to have concluded that two of the coins belonged to that lady, notwithstanding that they bear distinctly the name Faustina in full, and not Sabina. But as the name Hadrianus is only given in the abbreviated form *Hadri*, while it is immediately followed by the name Antoninus Pius in full, and as moreover it is well-known that the Emperor Antoninus adopted his adoptive father's name Hadrianus, it is quite plain that the coin in question does not belong to the emperor Hadrian, but to his adopted son and successor Antoninus Pius.

The five coins may be described thus :

1. *Obverse*: Laurel-crowned head of the Emperor, to right. *Legend* : ANTONINUS AUG. PIUS P. P. TR. P. XXII.

Reverse : A female dropping something into a tripod. *Legend* : VOTA SUSCEPTA Dec. III, (in the exergue) Cos. III (III?)

2. *Obv.* : Head of Empress to right. *Legend* : DIVA FAUSTINA. *Rev.* : Ceres standing holding (apparently) a torch and ears of corn. *Legend* : AUGUSTA. (Akerman, No. 7, Vol. I, p. 273.)

3. *Obv.* : Head of Empress to right. *Legend* : DIVA FAUSTINA. *Rev.* : Ceres standing holding (apparently) a torch in each arm. *Legend* : AUGUSTA.

4. *Obv.* : Head of Emperor, bare, to left. *Legend* : IMP. T. AEL. CAES. HADRI. ANTONINUS (continued on reverse). *Rev.* : A female offering before an altar. *Legend* : AUG. PIUS P. M. TR. P. COS. DES. II.

5. *Obv.* : Head of Emperor, bare, to right. *Legend* : ANTONINUS

AUG. PIUS P. P. TR. P. XIII. Rev. : Two female figures standing, one holding corn, the other a globe. Legend : LÆTITIA Cos. IIII (Akerman, Vol. I, p. 257, No. 29).

Antoninus Pius was invested with the title of Cæsar and endowed with the Tribunician Power in the year 891 U. C. = 138 A. D. He then took the names of Titus Aelius Hadrianus Antoninus, to mark his adoption by Hadrian. He succeeded Hadrian in the same year, and received from the Senate the title of Pius. In the following year, 892 U. C. = 139 A. D. he took the title of Pater Patriæ. Coin No. 4 shows all these names and titles with the exception of Pater Patriæ ; accordingly it must have been struck in the year 138 A. D. Coin No. 5, which shows the 14th year of the Tribunician power, belongs to the year, 151 A. D. ; and Coin No. 1, which has the 22nd year of that power, belongs to the year 159 A. D., which falls within the 3rd Decennium of Antoninus's reign, who reigned from A. D. 138—161.

About this time the Roman Empire acquired its furthest extent towards the East, Armenia being made a Roman province by Trajan. The frequent wars and commerce with eastern nations during this period explain the transportation of Roman coins into India, among which those of Trajan, Hadrian and Antonine are of most frequent occurrence. The earliest find of Roman coins, of which there is any record belonged to those three sovereigns (see *Asiatic Researches*, Vol. II, p. 332), and the last great find, before the present one, made in the Ahinposh Töp, belonged to Domitian, Trajan and Hadrian (see *Proceedings of the Asiatic Society of Bengal*, for March, April and August 1879).

Some time must be allowed for the travelling of the coins to India, and for their wear and tear, of which they show some traces. This need not have been more, however, than some 40 or 50 years. Assuming, then, the armlet to be a genuine piece of antiquity, of which there appears to be no sufficient reason to doubt, its age may be put down to about the year 200 A. D.

I agree with Mr. Rodgers that the coins must have been current for some time before they were set in the armlet. Otherwise they would have suffered more on their inside. But both sides show an equally worn appearance, though on the whole they are in very good preservation. Mr. Rodgers, however, is mistaken in his observation that the "wire of the edges must have been drawn, for it shows nowhere any sign of a hammer having touched it." I have shown the armlet to the well-known Calcutta firm of jewellers, Messrs. Cooke and Kelvey. They say that the wire is not drawn, but made with the hammer. They further say that the armlet in its present state shows signs of having been in a "jeweller's colouring pot." The explanation of this may

probably be that the ornament was given to a jeweller, either by the original finder or by some of those through whose hands it subsequently passed, for the purpose of testing the true nature of its metal.

I think the price paid by the Government for the acquisition of the armlet, *viz.*, Rs. 150, a fair one. The intrinsic value of the gold coins is about Rs. 14 each (at the present rate of discount); total of the five gold coins, about Rs. 70. The gold framework is worth about as much more. From the numismatic point of view, the coins would have an additional value, on account of their being found in India. If found in Europe, I do not suppose, they would have any special value.

It would be a pity to break up the armlet for the purpose of distributing the coins to the several institutions named in the Resolution of the Government India on the subject. I would, therefore, suggest that it be given, in its entirety, to the Imperial Museum in Calcutta, which, according to the terms of the Government Resolution, has the first claim to all objects that cannot be divided.

Note.—Dr. Hoernle's suggestion was sanctioned by the Government of the Punjab. The ornament is now deposited in the Imperial Museum.

The following papers were read—

1. *List of Butterflies taken in Kumáon.*—By WILLIAM DOHERTY, Cincinnati, U. S. A. Communicated by the NATURAL HISTORY SECRETARY.

This paper having already been published in the Journal, Part II, No. 2 for the current year, an abstract is unnecessary.

The PRESIDENT made the following remarks:—The paper of Mr. Doherty on the *Rhopalocera* of Kumáon bears ample evidence of care, accuracy and knowledge in its preparation. I state this with the more confidence as I have myself collected in the Pindari valley and north-eastern Kumáon in 1869 and again in 1872-75 and published a list of my captures in 1882. Mr. Doherty's account of the local distribution of species is very interesting, and his statement that the valley of the Káli separating Kumaon from Nepál forms a genuine zoological boundary is borne out by all that we know of the other groups of animals and insects of that locality. In my memoir on Kumáon (forming volumes x to xii of the Gazetteer N.-W. Provinces) I have referred to this subject (l. c. xi, p. 97) thus:—"The study of the local insect fauna of the Himálayan districts of the N.-W. Provinces is in itself especially to be desired; for the Káli river is not only a political and ethnological barrier, but also a great natural boundary separating the species proper to the eastern Himálaya and related

to the great Malayan fauna from those that belong to the western range with their Palæarctic and African affinities. Moreover between the swamps of the Tarái on the south and the snowy range there are examples of diverse forms of climate, each with its corresponding flora and fauna. In places, the naturalist may ascend direct from a river bed, bearing vegetation common to it and the tropics, to the region of perpetual snow with its Alpine flora. Hence we find along the foot of the hills and far up the deeper valleys an abundance of forms of insect life typical of more tropical climes and well beyond their natural limits. They betray their southern origin in their dwarfed size and soon give place to other types fulfilling the same functions under a different and more suitable form. In addition to this mingling of eastern and western forms there is also an affinity in many genera with the corresponding genera found in Europe and in northern Asia, and there are even several species identical with those found in Europe, so that we have within a comparatively small field, examples of the fauna of the principal nature-divisions of the old world." Similar testimony in regard to the flora of Kumáon is given by Dr. King (l. c. x, p. 303) and Dr. Watson (l. c. x, p. 324). Amongst others of European affinity *Vanessa kaschmirensis* appears to be only a local variety of the European form *V. urticae*: *Gonepteryx nepalensis* is the same as *G. rhamni*: *Papilio asiaticus* is the local form of *P. machaon* and the cosmopolitan *Pyrameis cardui* is found in Kumaon and indeed all over India. *Argynnis issaea* too appears to be little more than a local form of *A. lathonia*.

Mr. Doherty brings into prominence two matters connected with the *Rhopalocera* which appear to deserve further investigation. The first refers to the seasonal dimorphism observable in certain groups, the wet-season brood differing considerably from the dry-season brood of the same species, so much so as to have induced Lepidopterists in some instances to consider them distinct species and to give different names to the two forms. This dimorphism has been noticed as occurring in *Junonia almana* and several species of *Mycalesis* by Mr. de Nicéville in a paper read before this Society in 1884, and is here again referred to by Mr. Doherty, who suggests that *Mycalesis sanatana*, Moore, is the dry-season form of *M. gopa*, Felder; *M. visala*, Moore, of *M. mineus*, Linn.: *M. lepcha*, Moore, of *M. malsara*, Moore: *M. langii* de Nicéville of *M. nicotia*, Hewitson, &c. There is much probability in the theory, and it certainly deserves to be worked out with the care and attention it is now receiving at the hands of Messrs. de Nicéville and Doherty.

The other subject brought forward by Mr. Doherty is the value of a study of the eggs of the *Rhopalocera* as an aid to the grouping of families and sub-families. He refers particularly to the *Nymphalina* of

Kirby and the confusion that exists in the arrangement of the genera now placed under that group, and thinks that a more natural grouping will be found in an arrangement based on the constant forms of the egg. He then proceeds to suggest a classification based primarily on the form of the first pair of feet and secondarily on the form of the egg. His studies in this direction have not proceeded far enough to include the whole of the Indian genera. Herr Rupertsberger undertook a similar inquiry for the eggs of the Coleoptera, and M. T. Goosens in 1883 published a paper on the eggs of Lepidoptera and endeavoured to base on them the value of the specific differences that then obtained in certain species. The latter reviews a large number of eggs of both the *Rhopalocera* and *Heterocera* and gives indications that we may obtain results valuable for classification and the fixation of species from their study.

2. *On the collection of Stomatopod Crustacea in the Indian Museum, Calcutta.*—By J. WOOD-MASON, Esq., Offg. Supdt. Indian Museum and Professor of Comparative Anatomy and Zoology, Medical College.

The following species are treated of:—

GONODACTYLINA.

Gonodactylus chiragra (Fabr.).

- *————— *brachysoma*, n. sp.
- *graphurus*, White.
- *syllarus*, (Linn.).
- *————— *glyptocercus*, W.-M.
- *trispinosus*, var. *pulchellus*, Miers.

Dactylogonus (n. gen.) *trachurus*, (v. Martens).

Pseudosquilla ciliata, (Fabr.).

- *oculata*, var. *spinifrons*, n.
- *ornata*, Miers.
- ? *monodactyla*, A. M.-E.

Lysiosquilla maculata, (Fabr.).

- *————— *spinosa*, (W.-M.).
- ? *acanthocarpus*, (White).

SQUILLINA.

- **Squilla raphidea*, Fabr.
- *scorpio*, Latr..
- *————— *gilesii*, n. sp.
- *————— *tenuispina*, n. sp.
- *————— *supplex*, W.-M.
- ? *multicarinata*, White.

- Squilla mantis*, Latr.
 ————— *dubia*, M.-E.
 *———— *oratoria*, De H.
 *———— *meridionalis*, n. sp.
 *———— *politula*, n. sp.
 *———— *interrupta*, n. sp.
 *———— *holoschista*, n. sp.
 *———— *hemischista*, n. sp.
 ————— *gonypetes*, n. sp.
 ————— *dermarestii*, Riso.
 **Chloridella decorata*, W.-M.
 *———— *marginata*, n. sp.
 *———— *murrayi*, n. sp.
Leptosquilla schmeltzii, (A. M.-E.).

The species whose names have an asterisk prefixed are figured in the plates which have been prepared in illustration of the paper.

The subject of conversation by the Natural History Secretary was "Some of the insect parasites of Indian Silkworms."

Mr. Barton Groves exhibited the following illustrated MSS. from the Palace at Mandalay.

No. 1. An Order issued by the *Hlut-daw*, or Royal Council of Burma. It is written with a style, on a strip of palm leaf and bears the stamped impression of the Royal Seal, a Peacock. The signature of one of the Ministers is on the back of the document.

No. 2. A manuscript Book in Burmese.

No. 3. An illustrated Book in the Pali character. An intelligent Burman who examined it said he believed it was used in Fortune-telling, that it was an original work and probably of some antiquity.

No. 4. A bark Manuscript, on which Dr. Rajendralala Mitra had forwarded the following note :—

"The bark roll measures 4'-4" × 4", and is coated on the outer surface with a bituminous composition to render it proof against the attack of white-ants. The inner surface bears three astrological diagrams in the middle, and fourteen lines of writing on each side, the last four lines on the left-hand side being a tabular statement. The letters are Bengali, written with a composition of lac-dye or *alakta*—the same which is used for dyeing the feet of women.

"The language of the record is Sanskrit, but the spelling is throughout very corrupt, reminding one of the spelling of Artemus Ward, or of

Robert, the Head Waiter, in *Punch*. The writer evidently had the matter by heart, and wrote down, to a great extent, phonetically. This is due to the fact of the Burmese employing, like the Pársis of Bombay, Bráhman astrologers to make their calculations, and such men are not always trained as scholars. Small colonies of Bengali astrologers are to be met with in different parts of Burmá, and some of them were very influential in the Burmese court. Isolated from their parent stock the colonists devote themselves to their own special science, but acquire no scholarship in the Sanskrit language. They preserve their Hinduism with scrupulous care.

"The subject matter of the writing is a horoscope. The diagrams give the aspect of the heavens at the moment of the person's birth, and the prose record explains the deductions to be made from the positions of the planets, signs of the zodiac and stellar conjunctions at that moment. Beginning with the first house ascendant, or the planet which reigned at the time of birth, the record gives the effects of each of the planets and their conjunctions to the fiftieth year of the person's life. The reason of the stoppage at this epoch apparently is the want of space for more writing; but at this time the person would be under the influence of Saturn and "suffer from a disease of the abdomen," which would, though not so stated, terminate fatally.

"The name of the person whose career the record foretells was Jittumiá. His father's name is not legible, owing to a fracture at the upper edge of the record. His grandfather's name was Akilasamudraka. He was born in the Saka year 1722 = A. D. 1800, on the completion of the 10th *Danda* (four hours) of the night, on Wednesday the 8th of the wane, the solar date being "after the 11th of Bhádra," (*ekádaśadivagata*). The word "after" (gate) shows that the actual date was the 12th, which was Wednesday, but the whole of which had not then expired. This mode of expression is peculiar to horoscopes; but in India the usual practice is to make the epithet apply to all the details of the time mentioned, and not only to the day of the month. Thus, a person born at the moment of writing this word (4h. 41m. P. M. of the 4th) would be described to have been born after 40 minutes, 9 hours, 3 days, 4 months, and 1885 years of the Christian year; and not, as we would ordinarily write, 41 minutes, 11 hours, 4 days, 5 months of 1886. As the horoscope was written obviously by a Bengali astrologer, he doubtless followed the Bengali practice, but, being ignorant and not knowing how to work out the formula in its entirety, stuck the epithet before the day of the month only.

"Assuming that the horoscope was written, as usual in Bengal, within the first six weeks after birth, it must be 85 years old.

"I enclose a Bengali transcript, but as the individual named is not a historical personage, I do not think it would be worth while publishing it in the Proceedings."

A curious earthenware Jar, painted with grotesque figures of birds and flowers, and glazed, brought from Mandalay, was also exhibited.

LIBRARY.

The following additions have been made to the Library since the Meeting held in April last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VII, No. 6, January, 1886.

—. American Journal of Mathematics, Vol. VIII, No. 2.

—. American Journal of Philology, Vol. VI, No. 4.

—. Circulars, Vol. V, No. 47.

Bombay. Bombay Natural History Society,—Journal, Vol. I, No. 2 April, 1886.

—. Indian Antiquary,—Vol. XIV, Part 178, December, 1885, Part 2; Vol. XV, Parts 180—183, February to May, 1886.

Brussels. Société Royale Malacologique de Belgique,—Procès-Verbal, 1st August, 1885 to 5th December, 1885.

Calcutta. Geological Survey of India,—Memoirs, Palæontologia Indica, Vol. III (series X), Parts 7 and 8.

—. Records, Vol. XIX, Part 2.

—. Indian Engineer,—Vol. I, Nos. 2 and 3.

—. Original Meteorological Observations, November, 1885.

Chicago. American Antiquarian,—Vol. VIII, No. 2.

Copenhagen. K Nardiske Oldakriftselskab, Aarbger, Vol. I, (2nd series), No. 1.

Dorpat. Naturforscher-Gesellschaft,—Archiv für die Naturkunde, Vol. X (series 2nd), No. 1.

—. Sitzungsberichte, Vol. VII, No. 1.

Edinburgh. Botanical Society,—Transactions and Proceedings, Vol. XVI, Part 2.

- Edinburgh. Scottish Geographical Magazine,—Vol. II, No. 4, April, 1886.
- Florence. Società Africana D'Italia,—Bullettino, Vol. II, No. 1.
- Havre. Société de Géographie Commerciale,—Bulletin, January and February, 1886.
- Lahore. Anjuman-i-Punjab,—Journal, Vol. VI, Nos. 14—17.
- Leipzig. Deutsche Morgenländische Gesellschaft,—Zeitschrift, Vol. XXXIX, No. 4.
- Liège. Société Géologique de Belgique,—Annales, Vol. XII.
- London. Academy,—Nos. 724—727.
- _____. Athenaeum,—Nos. 3047—3050.
- _____. Geological Society,—Quarterly Journal, Vol. XLII, No. 165.
- _____. Nature,—Vol. XXXIII, Nos. 855—858.
- _____. Royal Astronomical Society,—Monthly notices, Vol. XLVI, No. 3, January, 1885.
- _____. Royal Geographical Society,—Proceedings, Vol. VIII, No. 3, March, 1886.
- _____. Royal Microscopical Society,—Journal, Vol. VI (series 2nd), Part I and Supplementary number containing Index.
- _____. _____. List of Fellows, 1886.
- _____. Royal Society,—Proceedings, Vol. XXXIX, No. 240.
- _____. Society of Telegraph-Engineers and Electricians,—Journal, Vol. XIV, No. 59.
- _____. Statistical Society,—Journal, Vol. XLVIII, Part 4, and Jubilee volume, June, 1885.
- _____. Zoological Society,—Transactions, Vol. XI, Part 2; Vol. XII, Part I.
- Paris. Journal Asiatique,—Vol. VI (series VIII), Nos. 2 and 3.
- _____. Société de Géographie,—Compte Rendu des Séances, Nos. 6 and 7, 1886.
- _____. Société Zoologique,—Bulletin, Parts 4—6, 1885.
- Pisa. Società Toscana di Scienze Naturali,—Atti, Processi Verbali, Vol. V.
- Rome. Società Degli Spettroscopisti Italiani,—Memorie, Vol. XIV, No. 12; Vol. XV, Nos. 1 and 2 and Index to Vol. XIV.

BOOKS AND PAMPHLETS,

presented by the Authors, Translators, &c.

- COWELL, E. B., and R. A. NEIL, *The Divyāvadāna, a collection of early Buddhist Legends.* Rl. 8vo. Cambridge, 1886.
- MACGREGOR, MAJOR C. R. *Outline of Singpho Grammar,* 8vo.

MACGREGOR, MAJOR C. R. Rough Notes on Traditions, Customs, &c. of the Singphos and Khámpis. Fcp. Dibrugarh, 1886.

NOER, GRAF. F. A. VON, and BUCHWALD, DR. GUSTAV VON, Kaiser Akbar, ein Versuch über die Geschichte Indiens. 8vo. Leiden, 1885.

MISCELLANEOUS PRESENTATIONS.

Returns of Railway-borne traffic in the Central Provinces for the quarter ending 31st December, 1885. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Masks, Labrets and certain Aboriginal customs, with an enquiry into the bearing of their Geographical Distribution, by W. H. Dall. 4to. Washington, 1885.

REV. C. H. A. DALL.

Report on Municipal Taxation and Expenditure in the Lower Provinces of Bengal for the year 1884-85. Fcp. Calcutta, 1886.

GOVERNMENT OF BENGAL.

Archæological Survey of India, Vol. XXII. Report of Tours in Gorakhpur, Saran and Ghazipur in 1877-78-79 and 80, by A. C. E. Carleyle. 8vo. Calcutta, 1885.

Correspondence between the Government of India and the Secretary of State, in 1883, regarding the steps to be taken for a Reduction of the Expenditure of India. Fcp. London, 1885.

Correspondence relating to Burmah since the Accession of King Thebaw in October, 1878. Fcp. London, 1886.

GOVT. OF INDIA. HOME DEPARTMENT.

Report on the Meteorology of India in 1884 by H. F. Blanford, F. R. S. 8l. 4to. Calcutta, 1886.

GOVT. OF INDIA. METEOR. REPORTER.

Archæological Survey of Southern India, Vol. IV. Tamil and Sanskrit Inscriptions, with some notes on village antiquities, collected chiefly in the South of the Madras Presidency. 4to. Madras, 1886.

Manual of the Administration of the Madras Presidency in illustration of the Records of Government and the yearly Administration Reports, Vol. I. Fcp. Madras, 1885.

GOVERNMENT OF MADRAS.

Report on the Administration of the Punjab and its dependencies for 1884-85. Fcp. Lahore, 1886.

GOVERNMENT OF PUNJAB.

Johns Hopkins University. Studies in Historical and Political Science
Fourth Series.

II Town Government in Rhode Island by W. E. Foster.

III The Narragansett Planters by E. Channing. 8vo. Baltimore, 1886.
JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Schriften der Naturforschenden Gesellschaft in Danzig, Vol. VI, Part
3. Rl. 8vo. Danzig, 1886.

NATURAL HISTORY SOCIETY, DANZIG.

Untersuchungen über die Entwicklung der primitiven Aorten, by John
Türstig. Rl. 8vo. Dorpat, 1884.

NATURFORSCHER-GESELLSCHAFT, DORPAT.

Proceedings and Transactions of the Royal Society of Canada for the
year 1884, Vol. II. 4to. Montreal, 1885.

PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries,—Vol. III, No. 31.

Berlin. Deutsche Litteraturzeitung,—Vol. VII, Nos. 6—9.

Calcutta. Calcutta Review,—Vol. LXXXII, No. 164, April, 1886.

Cassel. Botanisches Centralblatt,—Vol. XXV, Nos. 6—9.

Göttingen. Gelehrte Anzeigen,—Nos. 2 and 3, 1886.

_____. Nachrichten,—No. 13, 1885 and Index for 1885.

Leipzig. Annalen der Physik und Chemie,—Vol. XXVII, No. 3.

_____. Beiblätter, Vol. X, No. 3.

_____. Literarisches Centralblatt, Nos. 7—10, 1886.

_____. Hesperos,—Vol. IV, Nos. 114 and 115.

London. Annals and Magazine of Natural History,—Vol. XVII, No.
99, March, 1886.

_____. Chemical News,—Vol. LIII, Nos. 1373—1375.

_____. Entomologist,—Vol. XIX, No. 274, March, 1886.

_____. Entomologist's Monthly Magazine,—Vol. XXII, No. 262,
March, 1886.

_____. Journal of Botany,—Vol. XXIV, No. 279, March, 1886.

_____. London, Edinburgh and Dublin Philosophical Magazine,—
Vol. XXI, No. 130, March, 1886.

_____. Mind,—Vol. XI, No. 42, April, 1886.

_____. Nineteenth Century,—Vol. XIX, No. 110, April, 1886.

_____. Publishers' Circular,—Vol. XLIX, Nos. 1164 and 1165.

_____. Society of Arts,—Journal, Vol. XXXIV, Nos. 1739—1741.

_____. New Haven, American Journal of Science,—Vol. XXXI, No.
182, February, 1886.

Paris. Academie des Sciences,—Comptes Rendus des Séances, Vol. CII,
Nos. 5—8.

Paris. *Annales de Chimie et de Physique*, (6th series), Vol. VII,
February, 1886.

—. *Revue Critique*,—Vol. XXI, Nos. 6—9, and Index to Vol. XX.

—. *Revue des Deux Mondes*,—Vol. LXXIV, Nos. 2 and 3.

—. *Revue Scientifique*,—Vol. XXXVII, Nos. 6—9.

Philadelphia. *Manual of Conchology*, Vol. II Part 5 (second series)
and Vol. VIII, Part 29.

Vienna. *Orientalische Museum*,—*Oesterreichische Monatsschrift für
den Orient*, Vol. XII, No. 3.

Books PURCHASED.

Sowerby's *Thesaurus Conchyliorum*, Part XLIII. Rl. 8vo. London,
1886.

Voyage de découvertes de "L'Astrolabe" pendant les années 1826-29
Faune Entomologique de l'Océan Pacifique. Par le Docteur Bois-
duval—Première Partie.—Lépidoptères—Deuxième Partie. Coléop-
tères 2 Vols. With an Atlas of 12 coloured Plates—Rl. 8vo. Paris,
1832.

NOTICE.

Foreign Societies who favour the Asiatic Society of Bengal with their publications are informed that they may be sent either to the address of the Society at Calcutta, or to the Agents of the Society in London, Messrs. Trübner & Co., 57 and 59 Ludgate Hill, London.

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Des Sociétés Etrangères qui honorent la Société Asiatique de Bengale de ses publications, sont averties par là, qu'ils peuvent les envoyer ou directement à l'adresse de la Société, 57, Park Street, Calcutta, ou aux Agents de la Société à Londres, Messrs. Trübner et Cie, 57 and 59 Ludgate Hill.

ANZEIGE.

Ausländische Gesellschaften welche die Asiatische Gesellschaft von Bengalen mit ihren Publicationen beeihren, sind hierdurch benachrichtigt dass sie dieselben entweder direct an die Adresse der Gesellschaft, 57 Park Street, Calcutta, oder an deren Agenten in London, Messrs. Trübner & Co., 57 and 59 Ludgate Hill, senden können.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 2nd June, 1886, at 9-15 P. M.

E. T. ATKINSON, Esq., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twelve presentations were announced, details of which are given in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members.

C. Baumgarten, Esq.

P. Doyle, Esq.

A. Macdonald, Esq.

Alexander Hogg, Esq.

The following gentleman is a candidate for election at the next meeting:

Dr. K. G. Sircar, M. B., proposed by A. F. M. Abdur Rahman, Esq., seconded by Dr. Hoernle.

The following gentlemen have intimated their wish to withdraw from the Society :

J. A. Bourdillon, Esq. E. E. A. Kuster, Esq.

The PHILOLOGICAL SECRETARY exhibited 1 gold and 1 silver coin of the reign of the Emperor Aurangzib and 1 silver coin of Sháh Jahán, found at Bijapur, presented by the Bombay Branch of the Royal Asiatic Society. Also 8 old copper coins presented by the Deputy Commissioner of Kheri, Oudh, found underground in the Fort of Ghori Sháh at Khairigarh in that district.

The PHILOLOGICAL SECRETARY read the following report on a find of 22 old silver coins in the Jullunder district.

Report on twenty-two coins forwarded by the Deputy Commissioner of Jullunder with his No. 584, dated 27th April 1886.

1. Neither the place nor particulars of find are mentioned.

2. They are all round rupees of the Emperor Akbar who reigned from 963 to 1014 A. H. = 1556-1605 A. D. and are of two types.

1st type, lettered and ornamented surfaces, *Ov:* Alláhu akbar, jalla jaláluhu. *Rev:* Date and mint.

	No. of specimens.
a. Mint Lahore, dates 44, 45, and 46.....	7
b. Mint Ahmedábád dates 44 and 49.....	14
2nd type, <i>Ov:</i> square area within scalloped octagon, legend Alláhu akbar, jalla jaláluhu. <i>Rev:</i> octagonal area within two intersected squares, legend and date.	
a. Mint Lahore, date 48	1
Total, ...	22
	—

The NATURAL HISTORY SECRETARY exhibited some deep sea Crustaceans belonging to the genus *Polycheles*, dredged up by H. M.'s Survey steamer "Investigator" off the coast of Ceylon.

The following papers were read :

1. *On the Life-History of certain Calcutta species of Satyrinæ, with especial reference to the alleged Seasonal Dimorphism exhibited by them.—By L. DE NICEVILLE, F. E. S.*

The PRESIDENT remarked :—It will be in the recollection of those present that in December 1884 Mr. de Nicéville brought to the notice of this Society the existence of seasonal variations in the markings of certain species of Lepidoptera found in Calcutta and its neighbourhood. In the rains the ocellar spots on the underside of the wings are distinct and prominent, whilst in the cold and dry season they are either obsolete or wanting. Mr. Doherty has observed a like phenomenon amongst similar species captured in the Kumáon hills. In his present paper Mr. de Nicéville has confirmed his observations by breeding from the eggs laid by one form, larvæ which developed into butterflies of the other form. Thus from *Y. hübneri*, Kirby, came towards the middle of November species in all respects identical with *Y. hora*, Moore, the former being the ocellated rainy-season form, and the latter the non-ocellated cold and dry weather form. Similar experiments show *Y. marshallii*,

Butler, is the cold weather non-ocellated form of *Y. philomela*, Johansen, *Mycalesis indistans*, Moore, is the non-ocellated form of *M. mineus*, Linn. and *Melanitis ismene*, Cramer, is the non-ocellated form of *M. leda*, Linn. There is no royal road to the acquisition of accurate knowledge regarding insect-life; and I would commend the process observed by Mr. de Nicéville as that most likely to lead to accuracy and confidence in the results. There is little doubt that progress in this direction will rid our lists of many species badly based on slight differences of colour and size and not on structural characters. Where these characters are vague or not easily differentiated in the imago we shall have to go to the pupa, larva and even to the egg to arrive at a sufficient basis for specific characters. For this purpose it is necessary to have the life-history of each species briefly and accurately recorded, and as the author of the paper just read has told us, the process is neither difficult nor exacting on our time or attention, and will well reward any one who desires to rise above the level of a mere collector. Let no one be discouraged by the long names attached to even the smallest insects: they are of no other value than to serve as arbitrary tickets by which students in other countries will recognise the labelled species as the one to which we refer. The letters of the alphabet, were they numerous enough and capable of a sufficient number of combinations, would serve equally well, for in the great majority of cases there is little or no visible connection between the species named and the name given to it. Doubtless in the earlier part of this century, when the number of species known were not even a tithe of those at present recorded, some effort was made to give suitable names, but practically this has now in a great measure been given up, and after exhausting the deities of the Greek and Roman mythology, authors seem obliged to turn to the Hindu pantheon, and even to the legends of China and ancient Irán for names.

2. *Additional notes on new or rare Indian Butterflies.—By WILLIAM DOHERTY. Communicated by the NATURAL HISTORY SECRETARY.*

3. *On the Derivation and Meaning of the Buddhist term Ekatibháva.—By DR. R. MITRA.*

Professor Max Müller has put forth as a conjecture (*Academy*, April 3, 1886, p. 241) that the term *ekatibháva* is "an irregular contraction of *eka-koṭibháva*." He does not, however, in any way pledge himself about its accuracy. He offers it without claiming "either the merit or the responsibility of it." This diffidence is due to the fact of the derivation being open to two serious objections; (1) the elision of the syllable *ka* in *eka*, and (2) the conversion of the cerebral *t* in *koṭi* into a dental letter. Of the elision there is no analogous instance in the

Sanskrit language, and the assumption, therefore, is entirely arbitrary. Professor Max Müller admits that “to take *ekoti* as an irregular contraction of *ekakoti* is, no doubt, unusual.” The conversion, though not absolutely inadmissible, is uncommon. Ordinarily the uncompounded dental *t* of the Sanskrit remains unchanged in the Páli, but occasionally it becomes *d* (dental), as in *vidatthi* from the Sanskrit *vitasti*, ‘a span.’ Accordingly the *ekodibháva* of the Páli texts may be looked upon as a legitimate derivative of the Sanskrit *ekotibháva*.

Nor is it difficult to trace a consistent and regular derivation for the word. To an Indian the most obvious derivation in Sanskrit is *eka* + *úti* = *ekoti*. Professor Max Müller has not noticed this derivation, but, adverting to a passage in Mr. Morris's letter in the *Academy* of March 27, says, ‘I do not give much for *ekoti* in the *Satapatha bráhmaṇa*, explained as meaning “having the same course.” It looks to me like an attempt to explain a Bháshá word which had ceased to be intelligible.’ I do not clearly understand the drift of this remark. If it means, as it obviously does, that *úti* is a ‘Bháshá’ or vernacular word and not Sanskrit, I would take exception to it. I look upon it as a standard Sanskrit word, quite as pure as any other in that language, unquestionably in no way less so than *eka*. In some form or other it occurs no less than two hundred and forty-seven times in the Sañhitá of the Rig Veda, (see Vocabulary attached to the 5th vol. of Max Müller's Rig Veda), and in the ‘Amarakosha,’ the ‘Sabdaratnávalí,’ the ‘Mediní’ and other dictionaries it is by no means wanting. It occurs in the Puráṇas too, and in the Bhágavata it is used as one of the ten characteristics of that Puráṇa. It is difficult to conceive how, in the face of these authorities, it should cease to be Sanskrit, and be looked upon as a Bháshá word.

Nor can it be said that the sense in which *úti* is used in Sanskrit would not be appropriate in the compound term as we have it in Buddhist literature. In the Rig Veda the meaning in which it is most frequently used is ‘preserving’ (R. V. 2. 1. 4. 6. *Devasya yantyútayo vividháḥ*), or ‘preserver’ (R. V. 4. 4. 2. *Urushyantam mādhvídásrá na útih*). Elsewhere it means ‘sewing,’ ‘weaving,’ ‘distilling,’ ‘oozing,’ ‘speed,’ ‘sport,’ ‘play,’ or ‘recreation.’ Sridhara Svámí, in his commentary on the Bhágavata, says it means “attachment to work.”* He also adds the meaning “play” (*lilá*). Böhtlingk, in the St. Petersburg Wörterbuch, gives all these meanings. Of these, the most likely meanings for the explanation of the compound term are ‘preserving,’ ‘attachment

* कर्मणां वासनाः कर्यन्ते कर्मभिः सन्तन्यन्ते इत्युतयः यदा दक्षार्थात् संस्तेपादा वयते धीतेरिदं रूपं । अथना कर्मभिर्बद्धन्ते संश्लिष्टन्ते वा जतयः ।

to work,' and 'play,' and any one of them, I should think, would suit the requirements of the case. Seeing that the term is used with reference to *dhyána* or meditation, the first meaning would imply the condition of preserving only one thing in the mind to the exclusion of all others; the second would imply attachment to one work to the exclusion of all others; the third would indicate devotion to one sport to the exclusion of all others. In any case the sum of the meaning would be undisturbed and exclusive concentration of the mind on one object, the same which is indicated by *ekágratá*, to which Professor Max Müller very correctly refers. Indeed his *ekakoti* is only a synonym of *ekágratá*, both meaning 'single-pointedness,' only *ekakoti* is not used by Sanskrit writers in that sense. Of course in the absence of any explanation of the term in any ancient text it is not possible to be positive, but it is not difficult to come to a close approximation, quite sufficient for all practical purposes.

The term is to be met with frequently in Buddhist literature, and Mr. Morris in his letter to the 'Academy' (March 27) adverts to several authorities. I shall, however, confine my attention to the 'Lalita Vistara' where the word occurs in a position in which its sense is most obvious. Chapter XXII of that work begins by describing four meditations or *dhyánas* which the Bodhisattva performed after overcoming Mára, (an account of which is given in the next preceding chapter). The description of the first two of these I shall here reproduce. "The Bodhisattva, having overcome the inimical Mára, having suppressed all thorns, having at the head of battle overpowered all success, having (before him) uplifted umbrellas, flags and pennons, free from all desires, free from all sins and inauspicious signs, performed the first *dhyána*, which was argumentative (*savitarka*), deliberative (*savichára*), the result of discrimination (*vivekaja*), joyous and pleasing, and enjoyed it. Having accomplished argumentativeness and dispassion, from peace of mind resulting from the condition of *ekoti*, he produced the second meditation, which was non-argumentative (*avítarka*), non-deliberative (*avichára*), the result of *samádhi* (*saṁádhija*), joyous and pleasing, and enjoyed it." (p. 439). From the position of the word *ekoti* in this passage (*ekotibhávát*, 'from the condition of *ekoti*') it is obvious that it implies the first meditation, and the nature of that meditation is defined by the three epithets *savitarka*, *savichára*, and *vivekaja*. These terms have been taken, like most of the philosophical terms of the Buddhists, from the Yoga system of the Hindus, and they are, with their privatives, thus explained in Bhoja's commentary on the Yoga aphorisms:—

'Among these (the four kinds of meditation), when accepting the gross elements and the organs as the objects, pondering is carried on

with reference to which is antecedent and which is consequent, and the relation of the words to their meanings, it is called “Argumentative meditation” (*savitarka-samádhi*). Should this pondering, however, be independent of the idea of their antecedents and their sequence and the relation between their names and meaning, it would be called “Non-argumentative” (*nirvitarka*). When pondering is engaged in with reference to something subtle, as the subtle elements and the internal organ, and to their qualities in relation to space, time, &c., it is “Deliberative” (*savichára*). But should this pondering be in regard to those subjects themselves, without reference to their relation to time and space and simply as substrata of qualities, it is said to be “Non-deliberative” (*nirvichára*). (My translation, of the Yoga, p. 18).

This shows clearly that the condition of *ekotibháva* is that of pondering on a single object, whether crude or subtle, or a conscious meditation which, in the language of the Yoga Aphorisms (I. 17), is “attended with argumentation, deliberation, joy and egoism.” *Uti* then is an object, and since that object is calculated to produce joy, it would be by no means unreasonable or improper to indicate it by a term which implies recreation, sport, or play. The Yogi makes meditation his only sport. In Yoga works this is called “seeded meditation” (*savíjasamádhi*), because the pondering is carried or in reference to a seed or nucleus. This is only a preparatory course, for it is practised to train the mind for the subsequent stages in which consciousness gradually fades away, and ultimately there is nothing left but mere existence. I admit that my theory involves the acceptance of a metaphorical meaning, but the use in the text of such terms as “joyous,” “pleasing,” and “enjoyment” removes the objection. At any rate it is not open to the objections I have urged above to the derivation given by Professor Max Müller. Still I offer it only as a conjecture for whatever it is worth.

4. *The Miná tribe of Jajpúr in Mewar.*—By KAVIRÁJ SHYÁMAL DÁS, M. R. A. S.

(Abstract.)

The Minás claim to be descended from high-caste fathers and low-caste mothers, and are divided into 340 clans, of which only 17 are numerous, the others being represented by only a few families each. They are found all over Rajputana but principally in Mewar, Jaypur, Bundi and Kota. The two most important clans are the Parihár and Mothis.

The Parihárs claim descent from Náhar Rao, Rája of Mandor in Márvár, and proofs of their existence are found as early as the 12th century. They are a manly warlike race, and practice husbandry merely

as a cloak to their normal profession of thieving. They levy black-mail on travellers and have a regular system of plunder.

The Mothis are said to be descended from a Pramara Rájpút, named Rohi Dás, and a Banjárá woman. They account for the name by a legend that their Banjárá ancestress gave birth to twins in a field of moth, whence they were called moth-is or 'lords of moth.' They worship an indigenous hero called Máláji, concerning whom they have a legend, which is given in some detail by the writer.

Brief notices are also given of the Sindum and Dhoding clans, and the author then expounds his own view of the origin of the race, whom he derives from the Vaidehas mentioned by Manu as descended from a Vaisya father and Brahminí mother. The offspring of Vaideha fathers and Bhil mothers were Meds or Mevs, from whose union with the Gujars from Sindh and Gujrát sprung the Minás, whose name he derives from Mev with the genitive particle ná of Gujarati. Evidence of place names is then adduced to shew the former habitat of Mevs and Minás, and proof of their connexion with the Gujars from certain points of similarity in their habits and customs.

The PRESIDENT remarked :—To any one coming from the N. W. Provinces the Mevs, Mewas or Mewatis are not unknown. Tradition makes them holders of the forests and fortresses in the Duáb from Meerut right down to Cawnpore before the Musalmán invasion. Later on, and indeed up to the first quarter of the present century, they were found in numbers along the foot of the Kumáon hills from the Ganges to the Gaula. Before the Musalmán invasion they were lords of the soil in the middle Duáb and were driven out, not by the conquerors only but by Rájpút colonies who had been disturbed by the invaders. The Musalmán historians are full of notices of the Mevs and Mewás and the trouble encountered in reducing them to subjection. During the present century they have sunk very low, taking to thieving, cattle-stealing and dákaiti as a livelihood, and the Mina Mevs especially have an unenviable record in our police annals. There is little doubt that even so they represent a non-Aryan race that once held great possessions in upper India, but much has yet to be done before we can accurately understand their old position in the complex agglomeration of races inhabiting India.

5. *Coin supplementary to the "Chronicles of the Pathan Kings of Delhi.—By EDWARD THOMAS, C. I. E."—By C. J. RODGERS, Esq.*

This is the author's fourth contribution to the numismatics of the pre-Moghul period. It contains drawings and descriptions of thirty coins, which are either new, or have been at one time, in his possession.

The coins are not arranged chronologically, but the author promises a fifth article to complete his series in which he will give a chronological arrangement of the whole. The coins described in the present article are those of Firúz Sháh, Shamsuddin Altamash, Tughlak Sháh, Ibráhim Sháh of Jaunpur, Nasiruddin Alá-uddin, Ibráhim Lodi, a new type of Changiz Khán, and others.

The article will be published in the Journal.

6. *Indian Ants of the Indian Museum, Calcutta. Part II.*—By PROF. AUG. FOREL, Zurich. Communicated by the NATURAL HISTORY SECRETARY.

7. *On two new species of Ilex from the Eastern Himalayas.*—By GEORGE KING, M. B., LL. D., F. L. S., Superintendent of the Royal Botanic Garden, Calcutta.

Both these Papers will be printed in full in the Journal, Part II.

The subject of Conversation by the PHILOLOGICAL SECRETARY was the Miná tribe of Jajpúr.

LIBRARY.

The following additions have been made to the Library since the meeting held in May last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS, presented by the respective Societies and Editors.

Angers. Société d'Etudes Scientifiques,—Bulletin, 1884.

Baltimore,—Johns Hopkins University,—American Chemical Journal, Vol. VIII, No. 1, March, 1886.

—. —. Studies from the Biological Laboratory, Vol. III, No. 5.

Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Tijdschrift, Vol. XXXI, Nos. 1 and 2.

—. Koninklijke Natuurkundige Vereeniging in Nederlandsch-Indië,—Natuurkundig Tijdschrift, Vol. XLV.

Bordeaux. Société Linnéenne,—Actes, Vol. XXXVIII.

Brussels. Société Royale des Sciences de Liége,—Mémoires, 2nd Series, Vol. XI.

Calcutta. Agricultural and Horticultural Society of India,—Journal, Vol. VII, Part 4.

—. Indian Engineer,—Vol. I, No. 5.

- Calcutta. Indian Meteorological Memoirs,—Vol. III, Part 1; Vol. IV, Part 1.
- Florence. Società Africana D' Italia,—Bullettino, Vol. II, No. 2.
- . Società Italiana di Antropologia, Etnologia e Psicologia Comparata,—Archivio per L' Antropologia e la Etnologia, Vol. XV, No. 3.
- . —. —. Sui denti incisivi dell' uomo—Osservazioni e Note del Dott. Iacopo Danielli.—Quadri Statistici.
- Giessen. Oberhessischen Gesellschaft für Natur und Heilkunde,—Vierundzwanzigster Bericht, Vol. XXIV.
- The Hague. Koninklijk Instituut voor de Taal-Land-en Volkenkunde van Nederlandsch-Indië—Bijdragen, Vol. V, No. 2.
- Ithaca. Cornell University,—Library Bulletin, Vol. II, No. 1.
- Lahore. Anjuman-i-Punjab,—Journal, Vol. VI, Nos. 18—21.
- London. Academy,—Nos. 728—731.
- . Athenaeum,—Nos. 3051—3054.
- . Nature,—Vol. XXXIII, Nos. 859—862.
- Paris. Annales du Musée Guimet,—Revue de L'Histoire des Religions, Vol. XI, Nos. 2 and 3; Vol. XII, Nos. 1—3.
- . Société de Géographie,—Compte Rendu des Séances, No. 8, 1886.
- Roorkee. Indian Forester,—Vol. XII, Nos. 4 and 5, April and May, 1886.
- . Professional Papers on Indian Engineering,—Vol. IV, No. 13, May, 1886.
- St. Petersburg. Russian Geographical Society,—Proceedings, Vol. XXII, No. 1.
- Toronto. Canadian Institute,—Proceedings, Vol. III, No. 3, February, 1886.
- Turin. R. Accademia delle Scienze,—Atti, Vol. XXI, No. 2.
- Vienna. Akademie der Wissenschaften,—Almanach, 1885.
- . —. Archiv für österreichische Geschichte, Vol. LXVI, Nos. 1 and 2; Vol. LXVII, No. 1.
- . —. Denkschriften, Mathematisch—Naturwissen Classe, Vols. LXVIII and LXIX.
- . —. —. Philosophisch-Historische classe, Vol. XXXV.
- . —. —. Sitzungsberichte, Mathematisch-Naturwissen Classe, Part I, Vol. XC, Nos. 1—5, Vol. XCI, Nos. 1—4; Part II, Vol. XC, Nos. 1—5, Vol. XCI, Nos. 1—3; Part III, Vol. LXXXIX, Nos. 3—5, Vol. XC, 1—5, Vol. XCI, Nos. 1 and 2.
- . —. —. Philosophisch-Historische Classe, Vol. CVII, Nos. 1—2; Vol. CVIII, Nos. 1—3; Vol. CIX, Nos. 1 and 2.

- Vienna. Akademie Sitzungsberichte, Register, Vols. LXXXVI to XC.
 ——. K. K. Geologische Reichsanstalt,—Jahrbuch. Vol. XXXVI,
 No. 1.
 ——. Verhandlungen, Nos. 2—4, 1886.
 Washington. Philosophical Society,—Bulletin, Vol. VIII.
 Yokohama. Deutsche Gesellschaft für Natur und Völkerkunde Ostasiens,
 Mittheilungen, Vol. IV, No. 34.
 Zagreb. Arkeologickoga Druzvta,—Viestnik, Vol. VIII, No. 2.

BOOKS AND PAMPHLETS.

presented by the Authors, Translators, &c.

- ROY, PROTAP CHANDRA. Mahábhárata, English translation, Parts 22
 and 23. 8vo. Calcutta, 1886.

MISCELLANEOUS PRESENTATIONS.

- Archaeological Survey of India. Reports of a Tour in Bundelkhand and
 Rewa in 1883-84 and in Rewa, Bundelkhand, Malwa and Gwalior in
 1884-85, Vol. XXI, Parts 1 and 2 by Major General Cunningham.
 8vo. Calcutta, 1885.

- East India Loans raised in England. Returns of all Loans raised in
 England under provisions of Act of Parliament outstanding at the
 commencement of the half years ended on 30th September, 1885
 and 31st March, 1886. Fcp. London, 1886.

- East India Loans raised in India. Returns of all Loans raised in India
 chargeable on the Revenues of India outstanding at the commence-
 ment of the half year ended 30th September, 1885. Fcp. London,
 1886.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

- International Meteorological Observations, February, 1886. 4to, Wash-
 ington, 1886.

- Memorandum to accompany Charts of Temperature and Rainfall of
 India by H. F. Blanford. 8vo. Calcutta, 1886.

- Monthly Weather Review, January, 1886. 4to. Washington, 1886.

GOVERNMENT OF INDIA, METEOROLOGICAL REPORTER.

- Report on Instruction in the Madras Presidency for 1884-85. Fcp.
 Madras, 1885.

GOVERNMENT OF MADRAS.

- Report of the second regular Settlement of the Land Revenue of the
 Jhelum district, Rawal Pindi Division. 8vo. Lahore, 1883.

Report on the Land Revenue Settlement of the Siba Jagir in the Kangra district of the Punjab. Rl. 8vo. Lahore, 1882.

GOVERNMENT OF THE PUNJAB.

Johns Hopkins University Studies in Historical and Political Science.
4th Series IV, Pennsylvania Boroughs, by W. P. Holcomb. 8vo.
Baltimore, 1886.

JOHNS HOPKINS UNIVERSITY, BALTIMORE.

Annales du Musée Guimet. Le Yi-king ou livre des Changements de la dynastie des Tsheon—Par P. L. F. Philastre—Vol. XVIII.
4to. Paris, 1885.

MUSÉE GUIMET.

Was Ecclesiastical Money coined at Clonmacnoise, A. D. 1170, by Aquila Smith, M. D., M. R. I. A.

V. A. SMITH, Esq.

Account of the final reductions with the details of the South Parasnath Meridional series and the South Malunsha Meridional series of the South East Quadrilateral. 4to. Dehra Dun, 1885.

SURVEY OF INDIA. TRIG. BRANCH.

PERIODICALS PURCHASED.

Bombay. Legends of the Punjab,—Vol. III, No. 29, May, 1886.

Calcutta. Indian Medical Gazette,—Vol. XXI, No. 4, April, 1886.

Edinburgh. Edinburgh Review,—Vol. CLXIII, No. 334, April, 1886.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XV,
Nos. 1—4.

Leipzig. Annalen der Physik und Chemie,—Vol. XXVII, No. 4.

London. Chemical News,—Vol. LIII, Nos. 1376—1380.

—. Nineteenth Century,—Vol. XIX, No. 111, May, 1886.

—. Publishers' Circular,—Vol. XLIX, Nos. 1166 and 1167.

—. Quarterly Review,—Vol. CLXII, No. 324, April, 1886.

—. Society of Arts,—Journal, Vol. XXXIV, Nos. 1742—1746.

—. Westminster Review,—Vol. CXXV, No. 138, April, 1886.

Paris. Revue des Deux Mondes,—Vol. LXXIV, No. 4; Vol. LXXV,
No. 1.



PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JULY, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 7th July, 1886, at 9.15 p. m.

E. T. ATKINSON, Esq., C. S., President in the chair.

The minutes of the last meeting were read and confirmed.

Twenty-seven presentations were announced, details of which are given in the Library List appended.

The following gentleman, duly proposed and seconded at the last meeting of the Society, was ballotted for and elected an Ordinary Member.

Dr. K. G. Sircar, M. B.

The following gentlemen are candidates for election at the next meeting :

Capt. C. T. Bingham, (for re-election) proposed by L. de Nicéville, Esq., seconded by Major G. F. L. Marshall.

R. E. S. Thomas, Esq., proposed by T. G. H. Moncrieffe, Esq., seconded by L. de Nicéville, Esq.

The following gentleman has intimated his wish to withdraw from the Society.

Maulvi Serájul Islám.

The PHILOLOGICAL SECRETARY exhibited 2 silver coins presented by the Deputy Commissioner of Hissar, being part of a find of Treasure Trove in that district.

The PHILOLOGICAL SECRETARY read the following reports on two finds of coins.

- I. Report on 12 silver coins forwarded by the Deputy Commissioner of Hoshiárpur, Central Provinces, with his No. 28, dated 7th January 1886.

The particulars and place of the find are not stated.

They are all round silver rupees of the following Moghul Emperors of Delhi.

	No. of specimens.
1. VI. <i>Aurangzib Alamgír</i> , A. H. 1068—1118 = 1658—1707 A. D. Circular Area. <i>Obv.</i> name of Emperor, legend and year of reign. <i>Rev.</i> Mint, legend and date. Mint Ak- barábád, year of reign 5	1
2. VIII. <i>Bahádur Sháh</i> (<i>Sháh Alam</i>), A. H. 1118— 1124 = 1707—1712 A. D. Circular Area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> Mint and year of reign. Mint Lahore, year of reign 2	1
3. XIII. <i>Muhammad Sháh</i> . A. H. 1131—1161 = 1719—1748 A. D. They are of two types, <i>viz.</i> :— a. Marsden's No. 916, p. 664. Mint, Jehánábád, years of reign 1-6-15 ... b. Marsden's No. 923, p. 668. Mint Jehánábád, years of reign 12-23-21	* 3 7 10
Total... —	12

- II. Report on 69 coins and a silver chain forwarded by the Deputy Commissioner of Montgomery with his No. 184, dated 10th February 1886.

1. The coins were found when digging the foundations of a bridge at Dipalpur.
2. They are all round silver coins of various Moghul Emperors.

	No. of Specimens.
1. V. <i>Sháh Jehán</i> , 1037—1068. A. H. = 1627— 1658, A. D. Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> Legend, Mint, and year of reign 1	1

		No. of specimens.
2. VI.	<i>Aurangzib Alamgir</i> , 1068—1118 A. H. = 1658—1707 A. D. They are of three types, <i>viz.</i> :—	
	a. Marsden's No. 897, p. 665. Mints Súrat, Láhor and Etáwah, years of reign 3-4-8.—27-28-38-41	9
	b. Circular Area. <i>Obv.</i> name of Em- peror and legend, with date under upper line. <i>Rev.</i> Mint and year of reign. Mint Akbarnuggur, year of reign 4	1
	c. Circular Area. <i>Obv.</i> name of Em- peror and legend. <i>Rev.</i> Mint and year of reign. Mint Murshidábád, year of reign 48	1 11
3. VIII.	<i>Bahádur Sháh</i> (Sháh Alam), 1118—1124 A. H. = 1707—1712 A. D. Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> legend, mint and year of reign. Mint Láhor, year of reign 3	1
4. IX.	<i>Jehándar Sháh</i> , 1124 A. H. = 1712 A. D. Marsden's No. 905, p. 659. Mint Sháh Jehánábád, year of reign 1	1
5. X.	<i>Farrokh Sír</i> , 1124—1131 A. H. = 1712— 1719 A. D. They are of two types, <i>viz.</i> :—	
	a. Marsden's No. 912, p. 662. Mints Sháh Jehánábád, Láhor and Sú- rat, years of reign 2-3-7	5
	b. Circular Area. <i>Obv.</i> name of Em- peror and legend. <i>Rev.</i> Mint and year of reign 5-7	2 7
6. XI.	<i>Rafíè ed derjat</i> , 1131 A. H. = 1719 A. D. <i>Obv.</i> name of Emperor and legend. <i>Rev.</i> Mint and year of reign. Mint Láhor, year of reign 1	1
7. XIII.	<i>Muhammad Sháh</i> , 1131—1161 A. H. = 1712—1748, A. D. They are of three types, <i>viz.</i> :—	

[JULY,

	No. of specimens.
a. Marsden's No. 918, p. 667. Mints Murshidábád, Láhor and Kórá. years of reign, 1-5-8-9-80-12-22-28	11
b. Marsden's No. 921, p. 667. Mints Murshidábád and Láhor. Years of reign 4-10-11-13-14-15-17 20-23-25	11
c. Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> legend. Mint and year of reign. Mint Láhor, years of reign 2-3-4-5-6-8-9-11-12-18-21-22-23-24-25-26.....	20 42
<hr/>	
8. XVI. <i>Alam Sháh</i> , 1175—1220 A. H. = 1761—1806, A. D. They are of three types, <i>viz.</i> :—	
a. Marsden's No. 951, p. 683. Mint Etáwah, years of reign 2-3	2
b. Circular Area. <i>Obv.</i> name of Emperor. <i>Rev.</i> legend, mint and year of reign. Mint indistinct, years of reign 2-3	2
c. Circular Area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> Mint and year of reign. Mint Karimábád, year of reign 2	1 5
Total... ..	<hr/> 69

3. The chain is an ordinary Indian silver chain of no importance.

BABU P. GHOSHA exhibited some Japanese Magic Mirrors, and made the following remarks on them :

Here are twelve Magic Mirrors of Japan. They are all of bronze, the proportion of tin to copper varying from

Copper	...	...	80	} a trace of zinc.
Tin	...	...	20	} No silver or arsenic.

to

Copper	...	...	80	} a trace of antimony.
Tin	...	...	16	} No silver.
Lead	...	...	4	

They are more or less productive of the so-called magical effects, which are increased by heating the disc or by rubbing their back with a hard and smooth surface.

They have all on their back certain devices deeply relieved and tolerably polished. The reflecting surface in some has an amalgam and is slightly convex. The designs on the back are not in the least traceable on the reflecting surface. They are of various sizes but all intended to be used as hand mirrors.

The phenomenon from which they derive their name occurs thus:—When a ray of strong divergent light, such as the sunlight or that of an oxyhydrogen lamp, is thrown upon the reflecting surface, and when its spectrum is cast upon a white screen, the devices on the back of the mirror are reproduced in the spectrum with more or less vividness, the relieved figures being represented by brighter lines and the depressions by darker shades.

It is remarkable that although the Magic Mirror of Japan was known for a long time in Europe so few attempts at explaining the phenomenon have been made. The earliest notice in Europe that I have obtained of the existence of these mirrors was in 1832 by Dr. Brewster, whose explanation was founded on the description of a mirror given by James Prinsep in the *Journal of this Society*, Vol. I.; but as Dr. Brewster had not seen the mirror, his explanation was necessarily defective.

The next notice was by Arago, who exhibited a mirror to the Academy of Sciences of France in 1844. In 1847 Stanislas Julien and Professer Person exhibited a mirror to the same Academy, and in 1853 Maillard produced a mirror, and a notice of the same appeared in the *Comptes Rendus* of the Academy for that year. So that altogether four notices of this curious work of ancient art occur in that periodical.

In 1864 and 1865 M. Govi read before the Academy of Turin two papers on the results of experiments made by him with three magic mirrors.

In 1878 Mr. Ayrton published in the *Proceedings of the Royal Society of London*, a paper setting forth the process of manufacturing the article, which he had observed while a Professor of the Polytechnic College of Japan. In addition to the opportunities mentioned above Mr. Ayrton had in his possession an excellent specimen of a magic mirror which he exhibited to the Society.

Previous to the publication of the last named paper, Dr. Geerts published a paper in the *Transactions of the Asiatic Society of Japan* for 1875-76 in which he fully gave the details of the method of manufacturing the same as practised in that country.

M. M. Bertin and Dubosq in the *Journal de Physique* give a résumé of the papers noted above.

So early as 1832, James Prinsep observed the following facts :

1. The disc is slightly convex on the reflecting side.
2. The ground is coated with a thin layer of silver.
3. Back deeply carved and indented.
4. Metal highly sonorous.
5. Conceal and cover the back still the spectrum shews the device on the back.

6. Irregularities of surface not perceptible with diffused light.

7. Even when the silvering is removed the image in the spectrum continues, but instead of shewing a bright white it becomes red.

8. Thick parts of the mirror are most illuminated.

The following he ascertained by experiment—

9. Specula of unequal thickness were cast and polished, the image reflected from them did not shew the device on the back : it was smooth.

10. Difference of density of the parts had nothing to do with the magic effect, for if the mirrors were stamped the thinnest parts being the densest ought to give the strongest reflection : but that was not the case.

11. A silver disc annealed at a red heat and stamped shewed a smooth spectrum.

Explanation of J. Prinsep :—

Irregularities of the surface. Rays from the concave portion converging in a focus give greater reflection.

This irregularity is increased by heating the disc when the thin parts varying in their expansion create concavity and convexity relatively. The convexity is not uniform nor is it convex everywhere. The places corresponding to the device on the back are concave.

The explanations of Stanislas Julien, Person and Brewster were alike. They all attribute the magic effect of the mirror to finer and more reflecting metal. This theory supposes that the reflecting surface is deeply engraved and the hollows are filled with a finer metal and then the whole polished.

M. Govi was the first to find out that heating the mirror improved its magic effect : the thinner parts being more rapidly heated than those in relief became more convex, the irregularities of the surface became more pronounced and the magic effect increased.

Mr. R. W. Atkinson of the University of Tokio, Japan, wrote in *Nature* that by rubbing the back of a mirror with a blunt polished instrument so as to create a scratch deep enough the spectrum indicated a bright image of that line.

Dr. Geert in 1875-76 pointed out that the effect was due to the irregularity of the polished surface owing to the buckling up of the plate.

Aryton summed up that—

The irregularities of the surface are brought about by the peculiar process adopted in working them. The mirror comes out from the mould as a plane disc. Before being polished the surface is scored in all directions with a pointed tool. Naturally it offers more resistance in the thick than in the thin parts, and the operation makes a concave surface, and the elastic force of the plate by re-action makes a convex surface, the convexity being more prominent in the thin parts of the plates than in those corresponding to the designs on the back.

M. M. Bertin and Dubosq's experiments, however, are the latest on the subject. They published the results of their experiments in the *Journal Physique*. They have not only fully corroborated the explanation given by J. Prinsep in 1832, but they have been so far successful as to be able to manufacture magic mirrors not only of speculum metal and bronze, but also of glass, which latter are superior to the bronze ones in many respects. Their first experiments in casting and polishing bronze mirrors were not at all satisfactory. But they found that by heating their mirror they succeeded in making it magical, and the effect continued so long as it remained hot. The effect partially remained after repeated heating. But repeated heating injures the mirror, as it is unequally heated in parts and the designs are deformed. The next natural step attained by the energetic experimenters was to produce change of curvature in the mirror by means other than heat. This they obtained by means of pressure. They prepared air-tight hollow boxes to which they fixed their mirror, and by rarifying or condensing the air of the box they gave diverse curvature to the mirror.

Following these experimenters M. Leon Laurent of Paris, an optician, has prepared glass mirrors which ordinarily reflect a smooth spectrum but under pressure become magical. These philosophical toys are now exhibited in Lecture rooms, and are the best explanation of the Japanese mirror.

Our next step ought to be to have magic mirrors without any device on the back. This may be prepared by taking cast of the reflecting surface of a mirror under pressure and then by reproducing it by galvanic deposition. The surface in that case will have all the irregularities of the reflecting surface of the magic mirror without the device on the back.

The following papers were read :—

1. *Note on some of the symbols on the coins of Kunanda.—By W. THEOBALD, ESQ., M. R. A. S.*

The paper will be published in full in Part I of the Journal for 1886.

2. *Remarks on an Inscription of Mahendrapála Deva of Kanauj.—By DR. RÁJENDRALÁLA MITRA.*

Nine-and-thirty years ago I translated, at the request of the late Mr. J. W. Laidlay, then Secretary of the Society, a copper-plate inscription received from Colonel Stacy.* This translation, together with my reading of the text, appeared in the Journal for 1848, without any note or comment on the historical value of the record. It was followed, in 1862, by a paper by Mr. F. E. Hall, who gave a revised reading with some comments. In the following year, i. e., twenty-four years ago, I published a paper under the title of "On a Land-grant of Mahendrapála Deva, of Kanauj," in which I found a counterpart of the genealogy given in the former plate. The transcript and translation in this instance were made from a facsimile furnished the Society by Mr. James Cosserat, of Motihári. Mr. J. F. Fleet, the Government Epigraphist, has now published (*Indian Antiquary*, XV, pp. 105 f.) a revised transcript of this record, together with some comments, in which he attempts to show that the grant does not refer to Kanauj; that the word Mahodaya, a synonym of Kanauj, does not mean Kanauj in the inscription; that the dynasty named was not of Kanauj, but of some place between Allahabad, Benares and Srávasti; and that there were many gross errors in my reading. The new transcript has been prepared after a careful examination of the original copper-plate by a professional gentleman of the high rank of Government Epigraphist, and is obviously worthy of every consideration. And if the deductions drawn from it be correct, it must follow that my paper should be entirely rejected. After a careful study of it, however, I find that no necessity has yet arisen for the Society to cancel my paper, nor for me to withdraw any of the leading assumptions I put forth in it.

The deductions made by Mr. Fleet are all based on the reading and interpretation of a single word in the first line of the record. He reads it *skandhávárát*, and translates it into "from the camp." He admits, however, that in the original the word as read by him is *skandháddrát*.

* The place where it was found is not known. Mr. Fleet is mistaken in supposing that it is alleged it was found at Vijayamandir, Udayapur. No such statement occurs in the Journal.

(p. 112, note 42), and it follows necessarily that his grand major is, by his own admission, a guess only. In 1848 I read the word on the Stacy plate to be *suddháchárát*, and Mr. Hall, after examining the plate, accepted that version in 1862. I have this day re-examined the plate, and found no reason to alter my original reading. The letters on the plate are large, deeply cut, and in an excellent state of preservation, but the phonetic value of two of the four syllables of which the word under dispute is made up is doubtful. The first syllable may be read at option *śu* or *ska*, more likely the latter. The second syllable is unmistakably and unquestionably *ddhá*, *d* superposed on *dhá*; it cannot possibly be read *náhá*. The third is unlike a *v*; the upper end of the loop in *v* usually coalesces with the perpendicular stroke a little below or at the point of junction of the upper horizontal stroke (*mátrá*), but the coalition is not complete when the necessity of curving it backwards for the vowel *e* is felt; but in the letter under notice the upward stroke of the loop rises wide-apart from the perpendicular stroke and joins the *mátrá* separately. This peculiarity is more common, though not characteristic, with *cha*. The governing syllable in the collocation is *ddhá* and under its influence I took the first syllable to be *śu* and not *ska*. Mr. Fleet wishes to take the first syllable to be the "light," and to alter *ddhá* into *náhá* and *chá* into *vá*. In matters of this kind the safest course is to prefer that which necessitates the smallest amount of assumption; and in the present instance my reading accepts one possible variation, and my critic's two, and I see no reason therefore to subscribe to his opinion. In the facsimile of the Dighwa plate received by me the letters appeared smudgy, but I was satisfied that they were the counterparts of what I had met with in the Stacy grant. Mr. Fleet thinks differently; but he is not positive about his own reading. He puts it forward as a guess, and it is hard therefore to accept it as an undoubted and reliable major.

Assuming, however, that Mr. Fleet's reading is the right one, the question arises, does the word *skandhávára* really mean a "camp" in the position in which it occurs in the inscription? Mr. Fleet seems to have no doubt in this respect. He says: "Mahendrapála and Vináyakapála's charters were both issued from Mahodaya. Dr. Fitz-Edward Hall first identified this place with Kányakubja or Kanauj; and this identification was accepted throughout the rest of the discussion, by Dr. Rájendralál Mitra and General Cunningham, as well as by himself. It may be perfectly true that Mahodaya is one of the names of Kányakubja. But the Mahodaya of these two inscriptions was only a *skandhávára* or 'camp,'—an epithet which it is most unlikely should be applied to so large and famous a *rájadháni* or 'capital,' as Kanauj, and there is

no reason why there should not have been several Mahodayas, just as there are several Udayapuras, in very different parts of the country," (p. 116). The late Doctor Wilson, however, thought differently. In his Sanskrit-English Dictionary, he gives, among other meanings of *Skandhávára*, "a royal capital." Hemachandra, a lexicographer of high authority, also supplies the same meaning, and, in the *Sabdachandriká*, we have *rájadhánýám*, the very word which Mr. Fleet insists should have been used. The *Sabdakalpadruma* and the *Váchaspatya* also use the same word. And, since *skandhávára* means a *rájadhání*, which would be a most appropriate epithet for a large metropolis like Kanauj, all the arguments founded on the assumption of its meaning 'a camp,' and the deductions drawn therefrom, are thrown away. I fancy Mr. Fleet accepted the first meaning which occurred to him, and did not take the trouble to look into any dictionary for it, and hence the mistake I here notice. In a footnote he refers his readers to a note of his in the *Indian Antiquary*, Vol. XII, p. 111, but that refers to *sthira-sivira*, not to *skandhá-vára*, and that does not advance the discussion in the least.

The question of date has been discussed by Mr. Fleet at some length, but in the absence of any datum it is vain to thrash evidence already well thrashed, nor do I think it worth while to notice the numerous hypercriticisms in which Mr. Fleet has indulged in regard to it. I cannot, however, allow this opportunity to pass without pointing out the erroneous character of two of the revisions he has made. I read the name of Ráma-bhadra's mother to be *Mahíśatá*, and that of his wife *Madappá*. My critic makes the former *Iśatá*, and the latter *Appá*. These changes have been accepted under the impression that the first syllable in either case is *mad*, an affix of the preceding word *Srí*. At first sight this does not appear to be inconsistent. In Bengal it is a common-enough practice in the present day to put *mad* after *Srí* when writing to, or about, a respectable person; but it serves only as an expletive, and does not in any way alter or affect the sense. *Srí* used alone is quite as expressive as it is in conjunction with *mad*. The practice, besides, does not obtain in the North Western Provinces, and that it did not obtain in mediæval times is well-known to readers of Sanskrit inscriptions. The inscription under notice is itself a sufficient proof in that respect. Mahendrapála, the reigning sovereign, who grants the charter, appears with *Srí* only, without the expletive affix. His male ancestors for five generations, all kings in their respective times, are treated in the same way; so are his mother, the queen dowager *Chandrabbhattáriká*, his great-great-grandmother, and great-great-great-grandmother, all queens *de facto* and *de jure*. In the Stacy plate his wives, *Dehanáá* and *Mahideví*, are equally content with *S'ri* only, without the *mad*. And there is nothing whatever

to show that the affix, though not needed for the reigning king and queen, was essential for the honour of the deceased grandmother and great-grandmother. It cannot be said that the affix has been used to prevent a hiatus, or facilitate the coalition of the initial vowels of the names with a preceding consonant, for the coalition or *sandhi* of the initial vowels with the vowel *i* of *S'rí* would have been quite as easy and convenient as with the consonant *d* of *mad*. It is observable, too, that the reading *madisáṭá* is not unquestionable. Mr. Fleet himself observes (p. 112, note 46,) that "the *d* of *dí* is somewhat damaged in this inscription, both on the seal and on the plate." Under the circumstances, I look upon the assumption of the *mad* as totally unjustifiable, and for the present the names should remain *Mahísáṭá* and *Madappá* as read by me.

P. S.—Since the above was in type I have read in the *Indian Antiquary* for May Mr. Fleet's paper on the Stacy plate. It calls for no remark in addition to what has been already anticipated in the above note. It is observable, however, that Mr. Fleet admits (p. 140) that the second syllable of the word which he reads *skundhuvára* is written *ddhú* and not *ndhá*.

3. *On Pests belonging to the Homopterous family of Coccidæ, which attack Tea, Cinchona, and Coffee trees.—By E. T. ATKINSON, Esq., C. S., B. A.*

In this paper the author seeks to give such an account of this important family as will induce observers to take up its study seriously. It comprises those insects known as scale-insects, or gall-insects, which are so hurtful to the coffee, cinchona, tea and fruit trees generally. Nothing of value has yet been written regarding those species of this family that occur in India, with the exception of the *Carteria lacca* that furnishes the lac and lac-dye, which forms such a valuable article of export from Calcutta. The family is distributed amongst the sub-families *Diaspina*, *Brachyscelina*, *Lecanina* and *Coccina*, of which some hundreds of species have been described, but very few of which are recorded from India. The larval form of these insects has six legs, many jointed antennæ, and a rostrum, or sucking apparatus: the adult ♀ as a rule has neither wings, legs, nor antennæ, but only a rostrum, whilst the adult ♂ has two wings, legs, and antennæ, but no rostrum, or mouth. Their forms vary from flat to spherical, many are covered with a white farinose filamentary substance, others with a felted, waxy, nacreous and even calcareous substance. All are minute and require much care in their manipulation and preservation. The author

disclaims all idea of purely scientific aims in this popular introduction to the study of a much neglected group of great economical importance to residents in the East. His object is to collect facts on which hereafter to base a scientific examination of the species of these insects occurring in India.

The PRESIDENT brought to the notice of the meeting letters addressed to him by Mr. Green, of Puduloya in Ceylon, regarding a new pest belonging to the Homopterous family *Coccidae*, which is now committing great ravages on the Coffee plantations there, and in some cases compelling the abandonment of its cultivation.

Mr. Green writes:—"I have been led to pay some attention to the Homoptera of Ceylon, chiefly by reason of the fearful destruction caused by many of their number to agricultural products. I am now sending you, under separate cover, a few specimens of these insects. The parcel contains:—

"(a) A glass tube with coffee leaves, on the under surface of which you will find a species of *Lecanium*. This has only lately appeared in Ceylon, but has already spread in an astonishing manner and has caused inconceivable destruction in the Coffee districts. It is entirely distinct from *L. coffee* and *L. nigrum*, noticed by Mr. Nietner in his pamphlet on 'The Coffee-tree and its enemies.' Both these two species I am familiarly acquainted with, though their ravages are now very slight compared to the work of the green insect now forwarded. I have not been able to obtain the male form, though both sexes of the other two are fairly common.

"(b.) Cinchona twigs with a species of *Coccus*, lying apparently beneath the cuticle of the bark, which is raised in the form of small blisters. This is a most extraordinary insect and, with closely allied species which are numerous on other plants, has considerably perplexed me, especially as to the nature of the integument which covers it. In the specimens from Cinchona this would seem to be actually the cuticle of the bark, many of the incipient cracks extending right across the integument of the insect. Those now sent are all females. The male form closely resembles those in the tube containing spirits of wine. The larvæ and pupa are very similar to the species found on tea-leaves. The adult female has neither legs, antennæ nor eyes, the only external member being a fine sucking bristle (rostrum) which proceeds from a spot near the middle of the undersurface. In the young all the members are complete.

* "(c.) *Loranthus* leaves with allied species of *Coccus*, also apparently lying beneath the cuticle of the leaf; but on examining the

integument under the microscope with transmitted light one finds no traces of cellular formation nor any stomata, all of which, however, are complete in the tissues of the leaf immediately below the insect. Adhering to this integument, or forming part of it, are always one or more of the characteristic scales of the *Coccidae*, which would seem to be the cast skins of the insect. The young larva after fixing itself to the leaf soon exhibits the scaly covering on its posterior half, leaving the anterior part free. The scale is then shed remaining in its place and the insect lies freely beneath and loses all its external members, except the sucking bristle. The integument, under a high magnifying power, appears to be composed of an irregular network of sinuous, intersecting filaments, with no trace of cellular formation.

"(d.) A tube containing both sexes of another species affecting the leaves of the *Loranthus*. The integument of the female is continuous with the woolly covering of the leaf. The males are minute red flies with one pair of two-veined semihyaline wings which at rest are folded straight down the back, completely overlapping each other: the antennæ are very long and setaceous: anal extremity without filaments but with a long central point. Both the upper and the under surface of the head appear to be furnished with a pair of eyes and I can find no ocelli. The lower pair of eyes correspond to what is described by Nietner in the ♂ of his *Pseudococcus* as 'two black knobs resembling blunted mandibles, representing the external mouth.' These two spots are present in the males of all this family, and I cannot help thinking that they have been erroneously described as mandibles, the external mouth, in my opinion, being present only as a minute spot between the anterior pair of legs, in the same position in which it is situate in the female. [Mr. Green is right in regarding these knobs other than mandibles; they are eyes.] If the head of the insect be macerated in water and examined with transmitted light, all four spots appear as colourless globules with two concentric dark rings, an appearance which would be given by the cornea of the eye."

Unfortunately most of these specimens suffered so much from damp in transit that they were useless for examination. "In a subsequent letter it is stated that "the green *Lecanium* has spread at an extraordinary rate, and we have in consequence been compelled to abandon a large acreage of coffee and replant the ground with tea. This species is vastly more destructive than anything of the kind that has previously been experienced. The ravages of *L. coffeeæ* were nothing in comparison. It is curious that though they have been increasing so rapidly there has been apparently no generation of male insects."

LIBRARY.

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 Chemical News,—Vol. LIII, Nos. 1381—1385.

 Entomologist,—Vol. XIX, No. 275, April, 1886.

 Entomologist's Monthly Magazine,—Vol. XXII, No. 263, April, 1886.

 Ibis,—Vol. IV (5th series), No. 14, April, 1886.

 Journal of Botany,—Vol. XXIV, No. 280, April, 1886.

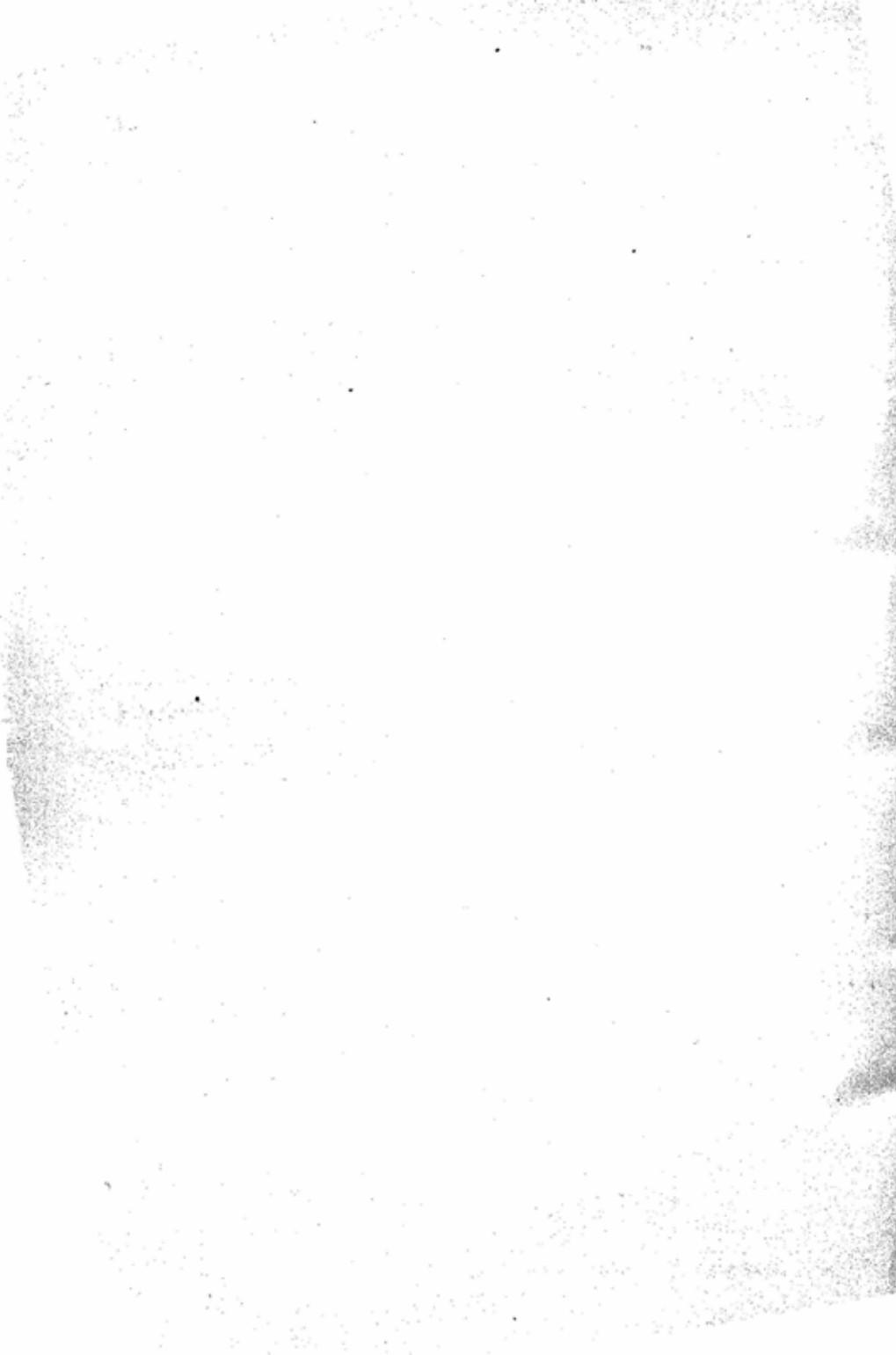
 London, Edinburgh and Dublin Philosophical Magazine,—Vol. XXI, No. 131, April, 1886.

 Messenger of Mathematics,—Vol. XV, No. 9, January, 1886.

- London. Nineteenth Century.—Vol. XIX, No. 112, June, 1886.
 ——. Numismatic Chronicle,—Part IV, 1885.
 ——. Publishers' Circular,—Vol. XLIX, Nos. 1168 and 1169.
 ——. Society of Arts,—Journal, Vol. XXXIV, Nos. 1747—1751.
 ——. Quarterly Journal of Microscopical Science, Vol. XXVI, No. 102, February, 1886.
 New Haven. American Journal of Science,—Vol. XXXI, Nos. 183 and 184, March and April, 1886.
 Paris. Académie des Sciences,—Comptes Rendus des Séances, Vol. CII, Nos. 9—14.
 ——. Annales de Chimie et de Physique,—Vol. VII (6th series), March and April, 1886.
 ——. Journal des Savants,—February and March, 1886.
 ——. Revue Critique,—Vol. XXI, Nos. 10—15.
 ——. Revue des Deux Mondes, Vol. LXXV, Nos. 2 and 3.
 ——. Revue Scientifique.—Vol. XXXVII, Nos. 10—15.

BOOKS PURCHASED.

- ANDREAS, F. C. Die Achaemenidischen und Sasanidischen Denkmäler und Inschriften von Persepolis, Istakhr, Pasargadae, Shâhpûr, 2 Vols. Fol. Berlin, 1882.
 Encyclopædia Britannica, Vol. XX (IXth Edition). 4to. Edinburgh, 1886.
 MÜLLER, F. MAX. Sacred Books of the East, Vols. XXVI—XXVIII. 8vo. London, 1885.
 POSNETT, HUTCHESON MACAULAY, M. A., LL. D., F. L. S., Comparative Literature (International Scientific Series, Vol. LV).
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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR AUGUST, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 4th August 1886, at 9:15 p. m.

E. T. ATKINSON, Esq., C. S., President in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty-four presentations were announced, as detailed in the Library List appended.

The following gentlemen, duly proposed and seconded at the last meeting of the Society, were ballotted for and elected Ordinary Members:

Captain C. T. Bingham, B. S. C.

R. E. S. Thomas, Esq.

The following gentlemen are candidates for election at the next meeting:

Count H. Condenhove, Attaché Austrian Hungarian Legation, Buenos Aires, proposed by E. F. T. Atkinson, Esq., seconded by H. M. Percival, Esq.

Captain M. J. Meade, S. C., Superintendent of Moghea Operations, Nimach, proposed by Surgeon Major T. H. Hendley, seconded by H. M. Percival, Esq.

Babu Rangalála Mukerji, proposed by Babu Ráj Krishna Mukerji, seconded by Babu Haraprasád Sástri.

The following papers were read :

1. *On the Antiquity of Khotan, translated and compiled from the Tibetan MSS. the "Bod-kye-yigtshang," and the "Dsam-ling Gyeshi."*
—By BABU SARAT CHANDRA DÁS, C. I. E.

(Abstract.)

This paper has been compiled from two Tibetan MSS. Bod-kye-yigtshang and Dsam-ling-Gyeshi.

Fragmentary records of the ancient kingdom of Khotan, which was founded in B. C. 235, were preserved in the great monastery of Sekya in Tibet, and from there the author of the first mentioned of the two MSS. obtained his information in 1432.

The paper may be described as a collection of Buddhist legends about Khotan. Khotan, or Khutan, is a little state in Kashgar and is described in the report of the Yarkund Mission. It was long a centre of Buddhism.

Babu Sarat Chandra Dás mentions that it was known by Indian writers as Chadana and by Tibetan writers as Li-yul.

According to one legend it was visited by king Asoka 250 years after the Nirvána of Buddha.

The paper will be published in the Journal, Part I.

2. *The Tibetan Chronological Table "Re-humig" from the MSS. historical work "Choos-joong-jonsang."* Compiled by Lama Yeshe Palgor of Amdo in 1747 A. D.—Translated by BABU SARAT CHANDRA DÁS, C. I. E.

(Abstract.)

In this paper Babu Sarat Chandra Dás continues the contributions to the history of Tibet and the Tibetan religion, of which eleven have already been published in the Journal.

The paper consists of a Chronological table of events in Tibet from 1026 to 1745. It is called in Tibetan the Re-lin-mig and has been extracted from a MS. work in Tibet called Chhos Joong Jonsang which was composed by Lama Yeshe Peljor of Amdo in 1747.

The table is a monkish chronicle and gives little or no information about secular matters. Babu Sarat Chandra Dás however states that it is regarded in Tibet as being of very high authority, and possibly Tibetan scholars may be able to derive valuable information from it.

Babu Sarat Chandra Dás has prefixed to it a life of the author, from which it appears that he visited China and resided for four years at Pekin, where he was treated with great distinction by the Emperor.

The paper will be published in the Journal, Part I.

Abstract of papers regarding Enquiries into the Ethnology of Bengal, forwarded by the Government of Bengal to the Asiatic Society for Criticism and Suggestions.

In September 1882 the Government of India, at the instance of the Census Committee, issued a Circular to all Local Governments and Administrations suggesting that steps should be taken, on the basis of the statistics recorded in the Census of 1881, towards collecting more pre-

cise information than at present exists regarding the castes and occupations of the people of India.

Owing to administrative reasons the work in Bengal was not commenced till February 1885, when Mr. H. H. Risley, C. S. was selected as possessing in a special degree the attainments necessary for the successful performance of the task. After making some experimental enquiries in Behar and North Eastern Bengal, and preparing a scheme for collecting information regarding the castes and occupations of the people in a systematic manner, Mr. Risley, with the permission of Government, proceeded to Lahore for the purpose of conferring with Mr. D. C. I. Ibbetson, Director of Public Instruction in the Punjab, and Mr. J. C. Nesfield, Inspector of Schools in Oudh, both of whom had had considerable experience in similar enquiries, and were in a position to offer valuable advice on the subject. One chief object of the conference was to secure, as far as possible, that ethnographical researches carried on in different Provinces of the Bengal Presidency should proceed on the same general lines in order that their results might be of some service to students of comparative ethnology in Europe. For this purpose two sets of questions were drawn up, the first set being a general series, designed to bring out by as few and simple questions as possible the leading characteristics of any particular caste; the second set was of a more special character, divided under the heads of Constitution—Domestic ceremonies—Religion—Superstitions—Social Customs—Occupations—Relations to Land—the minute detail being intended to cover the main heads of ethnographical enquiry in India.

From the standpoint of the modern science of anthropology it is hoped that it may be possible, by careful observation of the social practises now prevailing in Bengal, to arrive at fresh data throwing light on the ethnographical problems on which scientific men, such as Sir John Lubbock, Sir Henry Maine, Mr. E. B. Taylor, M. Emile Laveleye, M. Fustel de Coulanges, and Herr Adolf Bastian are engaged in Europe. The principal points, which it is supposed a record of Indian customs may help to clear up, are the early history of marriage, the development of the family, modes of relationship, the early history of inheritance, and the growth of property in land. These are some of the questions which European ethnologists are interested in, and a distinct hope has already been expressed by Sir Henry Maine that something may be done to render available for the use of scientific men in Europe, the large body of barbarous or semi-barbarous customs, both Aryan and non-Aryan, which still survives in India. It is felt that many of the ethnological speculations of recent years have been based too exclusively upon comparatively unverified accounts of the customs of savages

of the lowest type; that the unrivalled opportunities for observation which European officials in India possess have hitherto been imperfectly utilized; and that such results as have been obtained have been recorded in publications not readily accessible, and without sufficient regard to the lines of investigation pursued by ethnologists in Europe. It is also apprehended that the rapid spread of education, and the growth of practical intelligence in India, may lead, within the next generation, to the abandonment of many practices which are of special interest to ethnologists.

Mr. Risley has been induced to supplement these enquiries by an examination of the physical characteristics of certain selected castes and tribes of Bengal, in consequence of having had some special opportunities, during the last five years, of observing the progress of the great religious and social movement described by Sir Alfred Lyall as "the gradual Brahmanising of the aboriginal, non-Aryan, or casteless tribes."* There is every reason to suppose that the movement has been going on for many centuries, and that, although at the present day its working can probably be most readily observed in Chotá-Nágpur, the Orissa hills, and parts of Eastern and Northern Bengal, it must formerly have operated on a similar scale in Bengal proper and Behar. The well-known tenth chapter of Manu, which endeavours to account for the existence of the non-Aryan castes by representing them as the offspring of marriages between the four original castes, gives clear indications that in Manu's time, fixed by Burnell at 500 A. D., some of the non-Aryan races had already begun to intrude upon the Brahmanical caste system, while others were still in the tribal stage. Arguing from facts now observable it seems likely that some of the castes alleged by Manu to be the result of more or less complicated crosses were really tribes that had lost their identity; for at the present day, by merely looking to customs, ceremonies and the like, it is found in the majority of cases that the admission of a tribe into the charmed circle of Hinduism results after a generation or two in the practical disappearance of the tribe as such. Its identity can no longer be traced by direct enquiries from its members, or inferred from observation of their usages. Later on not only do distinctive customs fall into disuse, but the tribe itself, after its promotion to the rank of a caste, breaks up into a number of endogamous groups, each of which practically forms a separate caste. But even in this extreme case the physical characteristics which distinguished the tribe tend on the whole to be preserved, and it is the persistence of the type which accounts for the differences of feature, which, though only definable by scientific methods, are marked enough to make

* *Asiatic Studies*, p. 102.

it possible within certain limits to make a fair guess at a man's caste from his personal appearance.

These general impressions regarding the differences of physical type observable within the range of the recognised caste organization, coupled with the difficulty of throwing much light upon the true origin of the lower and intermediate castes by collating customs and ceremonies which they have borrowed in the most liberal fashion from the higher castes, suggested the possibility of applying to the leading tribes and castes of Bengal the methods of recording and comparing typical physical characteristics which have yielded valuable results in other parts of the world. Acting on the suggestion of Professor Flower, Director of the Natural History Department of the British Museum, which was concurred in by Mr. Francis Galton, President of the Anthropological Institute of Great Britain, Mr. Risley has adopted the plan laid down by Dr. Paul Topinard, Professor of the School of Anthropology and Secretary to the Anthropological Society of Paris, in his book entitled "Éléments d' Anthropologie Générale," which contains full details of the method in which the enquiry should be prosecuted, —a method which has been found applicable to Indian conditions for dealing with living subjects.

The Government of Bengal are anxious that any criticisms or suggestions that many occur to the Members of the Asiatic Society may be communicated to Mr. Risley for guidance in the prosecution of his enquiries.

LIBRARY.

The following additions have been made to the Library since the meeting held in July last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VIII, No. 3, June, 1886.

_____. _____. Circulars, Vol. V, No. 50.

_____. _____. Register, 1885-86.

_____. _____. Studies from the Biological Laboratory, Vol. III, No. 7, June, 1886.

- Berlin. Königlich Preussische Akademie der Wissenschaften,—Sitzungsberichte, Nos. 40—54, 1884; Nos. 1—39, 1885, with Index for 1884.
- Bombay. Bombay Natural History Society,—Journal, Vol. I, No. 3, July, 1886.
- _____. Indian Antiquary,—Vol. XV, Part 185, July, 1886.
- Bordeaux. L' Académie Nationale des Sciences, Belles Lettres et Arts,—Actes, Vols. XLIV—XLVI.
- Bruxelles. Société Entomologique de Belgique,—Annales, Vol. XXIX, Part 2.
- Budapest. Magyar Tudományos Akadémia,—Bulletins, Nos. 1—2, 1884; No. 3, 1885.
- _____. Ertekezések, Vol. XI, Nos. 11 and 12; Vol. XII, Nos. 1—5.
- _____. Mathematische und Naturwissenschaftliche Beiträge aus Ungarn, Vol. II.
- _____. Nyelvemléktár, Vols. XI and XII.
- _____. Nyelvtudományi Közlemények, Vol. XVIII, Nos. 2 and 3; Vol. XIX, No. 1.
- _____. Régi Magyar Könyvtár, Vol. II.
- _____. Ungarische Revue, Nos. 1—7, 1885.
- Buenos Aires. Museo Nacional,—Anales, Vol. III, No. 2.
- Calcutta. Indian Engineer,—Vol. I, Nos. 8 and 9.
- _____. Original Meteorological Observations,—February and March, 1886.
- Christiania. Videnskabs-Selskabet,—Forhandlinger, 1885.
- Dorpat. Naturforscher-Gesellschaft,—Archiv für die Naturkunde, series i, Vol. IX, No. 3; series ii, Vol. X, No. 2.
- _____. Sitzungsberichte, Vol. VII, No. 2.
- The Hague. Koninklijk Instituut voor de Taal,—Land-en Volkenkunde van Nederlandsch-Indië,—Bijdragen, series v, Vol. I, No. 3.
- Lahore. Anjuman-i-Punjab, Journal (English section), Vol. VI, Nos. 27 and 28.
- London. Academy,—Nos. 737—740.
- _____. Athenæum,—Nos. 3060—3063.
- _____. Geological Society,—Quarterly Journal, Vol. XLII, Part 2, No. 166, May, 1886.
- _____. Nature,—Vol. XXXIV, Nos. 868—871.
- _____. Royal Astronomical Society,—Monthly notices, Vol. XLVI, No. 6, April, 1886.
- _____. Royal Geographical Society,—Proceedings, Vol. VIII, No. 5, May, 1886.

- London. Royal Society,—Proceedings, Vol. XL, No. 242.
 ——. Statistical Society,—Journal, Vol. XLIX, Part 1, March, 1886.
 Moscow. Société Impériale des Naturalistes,—Bulletin, Nos. 1 and 2, 1885.
 Paris. Société Académique Indo-Chinoise,—Bulletin, series ii, Vol. II.
 ——. Société d' Anthropologie,—Bulletins, series iii, Vol. IX, No. 1.
 ——. Société de Géographie,—Compte Rendu des Séances, Nos. 12 and 13, 1886.
 ——. Société Zoologique,—Bulletin, Vol. XI, Nos. 1—3.
 ——. Musée Guimet,—Revue de L' Histoire des Religions, Vol. XIII, No. 1.
 Rome. Società Degli Spettroscopisti Italiani,—Memorie, Vol. XV, No. 5, May, 1886.
 Roorkee. Indian Forester,—Vol. XII, No. 6, June, 1886.
 Trieste. Società Adriatica di Scienze Naturali,—Bollettino, Vol. IX, Nos. 1 and 2.
 Turin. R Accademia Delle Scienze,—Atti, Vol. XXI, No. 5, April, 1886.
 Yokohama. Asiatic Society of Japan,—Transactions, Vol. XIV, Part 1.

BOOKS AND PAMPHLETS,

presented by the Authors, Translators, &c.

- GILES, HERBERT A. The Remains of Lao Tzu. Re-translated. 8vo. Hongkong, 1886.
 ROY, PROTAP CHANDRA. The Mahábhárata, translated into English Prose Part XXIV. 8vo. Calcutta, 1886.

MISCELLANEOUS PRESENTATIONS.

- Report on the Jails of the Central Provinces for the year 1885. Fcp. Nagpur, 1886.
 Report on the Nagpur Experimental Farm in the Central Provinces for the year 1885-86. Fcp. Nagpur, 1886.
 Report on the working of the Registration Department in the Central Provinces for the year 1885-86. Fcp. Nagpur, 1886.
 Review of the Reports on Estates under Government management in the Central Provinces during the year ending September 30th, 1885. Fcp. Nagpur, 1886.

CHIEF COMMISSIONER, CENTRAL PROVINCES.

Annual Report on Inland Emigration for the year 1885. Fcp. Calcutta, 1886.

Annual Report on the Insane Asylums in Bengal for the year 1885. Fcp. Calcutta, 1886.

Annual Report on the Police Administration of the Town of Calcutta and its suburbs for the year 1885. Fcp. Calcutta, 1886.

Report of the Calcutta Court of Small Causes for the year 1885. Fcp. Calcutta, 1886.

GOVERNMENT OF BENGAL.

Excursions et Reconnaissances,—Vol. XI, No. 26. 8vo. Saigon, 1886.

GOVERNMENT OF FRENCH COCHIN CHINA.

Pahlavi, Gujarati and English Dictionary by Jamaspji Dastur Minocherherji Jamasp Asana, M. A., M. D., Vol. IV. 8vo. Bombay, 1886.

Telegraphic Correspondence relating to Military Executions and Dacoity in Burmah. Fcp. London, 1886.

GOVERNMENT OF INDIA, HOME DEPARTMENT.

International Meteorological Observations, April, 1885. 4to. Washington, 1886.

Monthly Weather Review, March, 1886. 4to. Washington, 1886.

GOVERNMENT OF INDIA, METEOR: REPORTER.

General Report on the operations of the Survey of India Department, administered under the Government of India during 1884-85.

GOVERNMENT OF INDIA, REVENUE DEPARTMENT.

Annual Report of the Madras Medical College, Session 1884-85. Fcp. Madras, 1886.

GOVERNMENT OF MADRAS.

A. Magyar Kötöszök, Egyuttal az Összetett Mondat Elmélete, by Simonyi Zsigmond. Rl. 8vo. Budapest, 1883.

Finn-Magyar Szótár, by Dr. Szinnyei József. Rl. 8vo. Budapest, 1884.

MAGYAR TUDOMÁNTOS AKADEMIA.

Administration Report of the Marine Survey of India for 1885-86.

MARINE SURVEY OF INDIA.

Delle Relazioni Antiche e Moderne fra L' Italia e L' India. Demy 8vo. Rome, 1886.

PIETRO AMAT DI S. FILIPPO.

Sacred books of the East by F. Max Müller. Vol. XXVI. The Satapatha-Brähmana by J. Eggeling, Part II, Books III and IV. 8vo. Oxford, 1885.

— Vols. XXVII and XXVIII. The sacred Books of China,—The Texts of Confucianism by James Legge, Parts III. and IV. 8vo. Oxford, 1885.

SECRETARY OF STATE FOR INDIA.

A Journey of Literary and Archaeological Research in Nepal and Northern India during the winter of 1884-85. By Cecil Bendall. 8vo. Cambridge, 1886.

UNIVERSITY PRESS, CAMBRIDGE.

Norges Gamle Love, by Gustav Storm. Vol. IV. 4to. Christiania, 1885.

UNIVERSITE ROYALE DE NORVEGE, CHRISTIANIA.

PERIODICALS PURCHASED.

Allahabad. Punjab Notes and Queries.—Vol. III, No. 34, July, 1886.

Berlin. Deutsche Litteraturzeitung,—Vol. VII, Nos. 16—21.

—. Journal für die reine und angewandte Mathematik,—Vol. XCIX, No. 4; Vol. C, No. 1.

Bombay. Legends of the Punjab,—Vol. III, No. 30, June, 1886.

Calcutta. Calcutta Review,—Vol. LXXXII, No. 165, July, 1886.

—. Indian Medical Gazette,—Vol. XXI, No. 7, July, 1886.

Cassel. Botanisches Centralblatt,—Vol. XXVI, Nos. 3—7.

Geneva. Archives des Sciences Physiques et Naturelles,—Vol. XV, No. 6.

Göttingen. Gelehrte Anzeigen,—Nos. 7—9, 1886.

—. Nachrichten,—Nos. 5 and 6, 1886.

Leipzig. Annalen der Physik und Chemie,—Vol. XXVIII, No. 3.

—. —. Beiblätter,—Vol. X, Nos. 5 and 6.

—. Hesperos,—Vol. IV, Nos. 118—120.

—. Literarisches Centralblatt,—Nos. 17—22, 1886.

London. Annals and Magazine of Natural History,—Vol. XVII, Nos. 101 and 102, May and June, 1886.

—. Chemical News,—Vol. LIII, Nos. 1386 and 1387; Vol. LIV. Nos. 1388 and 1389, and Index to Vol. LIII.

—. Entomologist,—Vol. XIX, No. 276, May, 1886.

—. Entomologist's Monthly Magazine,—Vol. XXII, No. 264, May, 1886.

—. Journal of Botany,—Vol. XXIV, No. 281, May, 1886.

—. London, Edinburgh and Dublin Philosophical Magazine,—Vol. XXI, Nos. 132 and 133, May and June, 1886.

—. Messenger of Mathematics,—Vol. XV, Nos. 10—12.

—. Nineteenth Century,—Vol. XX, No. 113, July, 1886.

—. Publishers' Circular,—Vol. XLIX, Nos. 1170 and 1171.

—. Quarterly Journal of Microscopical Science, Vol. XXVI, No. 103, April, 1886.

—. Quarterly Review,—Vol. CLXIII, No. 325, July, 1886.

—. Society of Arts,—Journal, Vol. XXXIV, Nos. 1752—1755.

New Haven. American Journal of Science,—Vol. XXXI, No. 185.
May, 1886.

Paris. Académie des Sciences,—Comptes Rendus des Séances, Vol. CII,
Nos. 15—20, and Tables, Vol. C.

—. Annales de Chimie et de Physique, Vol. VIII, (6^{me} Serie),
May, 1886.

—. Journal des Savants,—April, 1886.

—. Revue Critique,—Vol. XXI, Nos. 16—20.

—. Revue des Deux Mondes,—Vol. LXXV, No. 4; Vol. LXXVI,
No. 1.

—. Revue de Linguistique,—Vol. XIX, No. 2.

—. Revue Scientifique,—Vol. XXXVII, Nos. 16—21.

BOOKS PURCHASED.

DISTANT, W. L. Rhopalocera Malayana : A Description of the Butterflies of the Malay Peninsula, Part XI, May, 1886. Rl. 4to. London, 1886.

HUDSON, C. T. The Rotifera or Wheel-Animalcules, Parts I—IV. 4to. London, 1886.

MILNE, JOHN. Earthquakes and other earth movements. (International Scientific Series, Vol. LVI). 8vo. London, 1886.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR NOVEMBER, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday, the 3rd November, 1886, at 9 P. M.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Seventy-seven presentations were announced, details of which are given in the Library list appended.

The SECRETARY reported that the following gentlemen had been elected Ordinary Members of the Society by the Council during the recess in accordance with rule 7.

Count H. Condenhove.

Captain M. J. Meade, S. C.

Babu Rangalála Mukerji.

Dr. G. H. D. Gimlette.

Hewling Luson, Esq.

Dr. L. A. Waddell.

The COUNCIL proposed the following gentleman for election as an Associate Member at the next meeting :

Babu Sarat Chandra Dás, C. I. E., Deputy Inspector of Schools, Darjeeling, on account of his attainments as a Tibetan scholar.

The following gentlemen have intimated their wish to withdraw from the Society :

C. S. Bayley, Esq.

W. C. Benett, Esq.

R. G. Thomson, Esq.

J. R. Reid, Esq.
 F. C. Black, Esq.
 C. Girdlestone, Esq.

The SECRETARY announced the death of the following Members of the Society :

Ordinary Members.

H. L. St. Barbe, Esq.
 Dr. J. E. N. Wise (Life Member).
 J. Holdsworth-Fisher, Esq.

Associate Members.

J. Schaumburgh, Esq.
 Rev. C. H. Dall.

The PHILOLOGICAL SECRETARY exhibited 3 silver coins presented by the Bombay Branch of the Royal Asiatic Society, being part of a find of Treasure Trove in the Khaira District.

The PHILOLOGICAL SECRETARY read reports on the following finds of coins, *viz.* :

- I. Report on 118 silver coins forwarded by the Collector of Tipperah with his No. 361. G. dated 23rd June, 1886.
1. The coins were found under the plinth of a house in Palgaon, Berahimpore, Pergunnah Sarail, subdivision Brahmanbariah.
 2. They are all round silver rupees of the Emperor Sháh Alam who reigned from 1175 to 1220 A. H. = 1768 to 1806 A. D.

	No. of specimens.
Type : Marsden's DCCCCLXVIII, p. 689. Mint Mur-	
shidábád, year of reign 19	118
II. Report on 32 coins forwarded by the Collector of Mozufferpore with his No. 483, dated 1st July, 1886.	
1. The coins were found whilst erecting a wall in the village of Belber, Pergunnah Bisarah.	
2. They are all silver coins of the following Moghul Emperors :	

	No. of specimens.
1. XIII, Muḥammad Sháh. A. H. 1131—1161 = A. D. 1719—1748. Marsden's No. DCCCXXII, p. 668. mint Ahmedábád, years of reign 27, 29, 30.....	3

	No. of specimens.
2. XIV, <i>Ahmed Sháh Bahádur</i> . A. H. 1161—1167 = A. D. 1748—1754. Circular area. <i>Ov.</i> name of Emperor and date. <i>Rev.</i> Legend, mint, and year of reign: mint indistinct, year of reign 2.....	1
3. XV, <i>Alamgír Záni</i> . A. H. 1167—1175 = A. D. 1754—1761. Circular area. <i>Ov.</i> name of Emperor. <i>Rev.</i> Trident, mint, and year of reign. mint Azimábád, years of reign 1, 2, 3, 6, 9.....	8
4. XVI, <i>Alam Sháh</i> . A. H. 1175—1220 = A. D. 1761—1806. They are of two types, <i>viz.</i> :—	
a. Marsden's No. DCCCLXI, p. 688. mint Murshidábád, years of reign 4, 12, 19.....	8
b. Marsden's No. DCCCLXVIII, p. 689. mint Murshidábád, year of reign 19	12
	20
Total, _____	32

III. Report on 68 silver coins forwarded by the Secretary to Government North-West Provinces and Oudh with his No. $\frac{3541}{\times 52}$, dated Naini Tal, 9th July, 1886.

1. The coins were found in the Basti district. The particulars of the find are not stated.

	No. of specimens.
1. Fifty-two are small and roughly executed silver coins described by Wilson in p. 586, pl. III, Vol. XVII of Asiatic Researches, <i>viz.</i> :—	
a. Figure No. LIX, pl. III	10
b. Figure No. LXII, pl. III.....	12
c. Indistinct	30
	52

2. VIII, <i>Bahádur Sháh</i> , A. H. 1118—1124 = A. D. 1707—1712. Marsden's No. DCCCI, p. 657. mint Súrat, year of reign 1	1
3. X, <i>Farrokh Sir</i> , A. H. 1124—1131 = A. D. 1712—1719. Marsden's No. DCCCCXII, p. 562. mint Sháh Jehánábád, years of reign 2, 5, 7	6

No. of specimens.

4. XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748. They are of three types, <i>viz.</i> :—	
a. Marsden's No. DCCCCXVII, p. 665. mint Shah Jehánábád, year of reign 2, 3, 7, 9, 11, 7	6
b. Marsden's No. DCCCCXVIII, p. 644. mint Sháh Jehánábád, year of reign 1	2
c. Marsden's No. DCCCCXXI, p. 667. mint Sháh Jehánábád, year of reign 11.....	1
	9
Total	68

IV. Report on 16 silver coins forwarded by the Collector of Monghyr with his letter No. 982, R., dated 20th July, 1886.

1. The coins were found at Jahángir, a hill situated in Thaná, Monghyr.
2. They are all round silver rupees of various Moghul Emperors.

No. of specimens.

1. V, <i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627—1658. Circular area. <i>Obv.</i> name of king and date. <i>Rev.</i> year of reign and mint: mint Murshidábád, year of reign 1, 2	8
2. X, <i>Farrokh Sir</i> , A. H. 1124—1131 = A. D. 1712—1719. Circular area. <i>Obv.</i> name of Emperor, legend and date. <i>Rev.</i> year of reign and mint: mint Murshidábád, year of reign 1, 6, 7	6
3. XIII, <i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748. Circular area. <i>Obv.</i> name of king and date. <i>Rev.</i> mint and year of reign: mint Murshidábád, year of reign 2	1
4. XVI, <i>Alam Sháh</i> , A. H. 1175—1220 = A. D. 1761—1806. Circular area. <i>Obv.</i> name of king. <i>Rev.</i> mint and year of reign: mint Murshidábád, year of reign 2	1
Total...	16

V. Report on 2 gold and 85 silver coins forwarded by the Deputy Commissioner of Sialkot with his letter No. 1503, dated 4th September 1886.

1. The coins were found in different places and on different dates, but no particulars connected with the finds have been given.
2. They are all coins of the under-mentioned Moghul Emperors.

No. of specimens.

Gold Coins.

1. VI,	<i>Aurangzib</i> , A. H. 1068—1118 = A. D. 1658 —1707. Type: Marsden's No. DCCCXc, p. 652. mint Jehánábád, year of reign 49...	1
2. XIII,	<i>Muhammad Sháh</i> , A. H. 1131—1161 = A. D. 1719—1748. Type: Marsden's No. DCCCCXXIII, p. 668. mint Jehánábád, year of reign 23	1
		—
	Total...	2

Silver Coins.

3. III,	<i>Jalál-ed-dín Akbar</i> , A. H. 963—1014 = A. D. 1556—1605, They are of six types, <i>viz.</i> :—	
a.	Marsden's No. DCCCXIX, p. 596. mint Fatehpur, dates 990-92-93- 94-95-96-97	31
b.	Marsden's No. DCCCXXVIII, p. 597. mint Ahmedábád, dates 997, 998, 1000, 1001 whole rupees..... 11 half rupees 4	— 15
c.	Marsden's No. DCCCXXIX, p. 599. mint "Camp" date 1000	9
d.	Marsden's No. DCCCXVI, p. 593. mint indistinct, date 984	9
e.	Marsden's No. DCCCXIX, p. 596. mint indistinct, date 990	3
f.	Circular area. <i>Obv.</i> legend, mint and year of reign. <i>Rev.</i> legend: mint Ahmedábád, and Láhor, year of reign 30, 34, 40	4

		No. of specimens.	
4.	V,	<i>Sháh Jehán</i> , A. H. 1037—1068 = A. D. 1627—1658, Marsden's No. DCCCLXIV, p. 637. mint indistinct, years of reign 5 and 20	3
5.	VI,	<i>Aurangzib</i> , A. H. 1068—1118 = A. D. 1658—1707. Marsden's No. DCCCXCV, p. 654. mint Jehánábád and Barhánpúr, years of reign 3, 5, 10, 16, 28, 43, 49	11
		Total...	85

VI. Report on 33 coins forwarded by the Collector of Hooghly with his No. 1133, dated 15th September 1886.

1. The coins were found in the wall of a house that was being pulled down at Dumurdah, Tháná Palagore.
2. They are all common silver coins of the Emperor Sháh Alam, who reigned from 1174 to 1220 A. H. = 1761—1806 A. D.

		No. of specimens.
Marsden's No. DCCCLXVIII,	p. 690. mint Mur-	
	shidábád, year of reign 19	
	whole rupees.....	29
	quarter rupees	4
	Total...	33

The following papers were read:—

1. *The Landshells of Perak*.—By O. F. VON MÖLLENDORF, PH. D. *Consul for the German Empire, Manila*.—Communicated by the NATURAL HISTORY SECRETARY.
2. *The Butterflies of Cachar*.—By PROFESSORS J. WOOD-MASON and L. DE NICE'VILLE, F. E. S.
3. *The Butterflies of Tavoy*.—By H. J. ELWES and L. DE NICE'VILLE F. E. S.—Communicated by the NATURAL HISTORY SECRETARY.
4. *On Solar Thermometer Observations at Allahabad*.—By S. A. HILL, B. Sc., A. R. S. M., *Meteorological Reporter for the N. W. Provinces and Oudh*.

These papers will be printed in full in the Journal, Part II.

THE VEDDAHS.

At a SPECIAL MEETING of the Asiatic Society of Bengal, held on Tuesday, the 23rd November, 1886, Mr. C. Stevens, of Brisbane, Australia, read a paper on "The result of enquiries and observations among the wild Veddahs of Ceylon as to their religious belief, domestic and social life, and intellectual capacity, undertaken with a view to obtaining a vocabulary and such information as would tend to solve the question as to the origin of the race." The lecture was illustrated by specimens of Veddah weapons and a number of skulls and skeletons.

Mr. Atkinson, President of the Society, introduced the visitor, and, in doing so, said:—The object of our meeting this evening is to hear Mr. Stevens give an account of the Veddahs of Ceylon, a tribe of people of much interest to those engaged in anthropological studies. The Veddahs are roughly divided into two classes, the coast or village Veddahs, who are comparatively civilised, and the rock or wild Veddahs, who still live in primitive barbarism, without clothing, agriculture, or fixed dwellings, and with religious beliefs only extending to the existence of more or less beneficent spirits representing the manes of their ancestors. The wild Veddahs are a dwarfish stunted race, of blackish complexion, and with straight black hair. Professor Flower, in a recent lecture before the Royal College of Surgeons in England, remarks that the crania of the Veddahs are very small, one of them, that of a female, being the smallest in the whole collection. They are all dolichocephalic, the prognathism is not very marked, and the nasal index is medium, characters which would connect them with the type of the lower grades of the inhabitants of Bengal. He further states that the condition of their bones and other physical characters give the impression of their being a race degenerated and enfeebled by generations of privation and other circumstances adverse to full development. With these remarks I beg to introduce to you Mr. Stevens, merely adding that those interested in the study of the history of the human race will find the Ethnological Library Series issued by Hennyer of Paris, and especially the "Introduction à l'étude des races Humaines," by M. A. de Quatrefages, of great assistance to themselves.

Mr. Stevens said, the information derived from actual residence among Veddahs of Ceylon in forest and cave, was so much at variance with the statements of prior writers upon the subject that he was unable until careful revision, comparison, and verification to give more than a sketch or outline of the daily life of the Veddah, leaving the questions of more purely scientific interest to form the subject of a paper which he intended to prepare. This variance was doubtless caused, partly by

alteration in the habits of those Veddahs who had of later years, by contact with the Singhalese and Tamils, and under pressure of scarcity of game, exchanged in some degree their original nomad life as hunters for the rude agriculture of the *chena* with consequent adoption more or less of Singhalese manners and customs: and partly by the term Veddah in earlier writings being applied to others than the race now known by that name. The time had undoubtedly passed away when the fullest information as to the origin of the Veddah could have been obtained. Rapidly dying out, the nomad will, in the course of the next fifty years, have ceased to exist as such. No systematic or organised endeavour appears to have been made to clear up the mystery which surrounds this sole surviving remnant of the aboriginal of Ceylon, and unless prompt action in that direction is taken, all opportunity will shortly have passed away. At one time so numerous as to occupy a considerable portion of the eastern side of the island, the nomad, or, as he is now not very correctly termed, the "Rock" Veddah, in distinction from his village or agricultural, hut-dwelling brethren, is now only to be found in a very small and remote strip of the early Veddirata. Much stress has been laid upon the alleged difficulty and danger of obtaining access to the Veddah, and so far as this relates to the Singhalese or Tamil visitor, it is undoubtedly correct, but not to the unaccompanied European. The dislike and contempt of the Veddah to the Singhalese is most marked, and it is on account of this feeling that the most incorrect conceptions of the race have been placed on record from time to time by European observers who have allowed the customary retinue of Singhalese or Tamil servants to be present at the interview. Brought before a European, under these circumstances, the Veddah assumes and maintains such an impenetrable mask of stolidity and impassiveness as to give good grounds for the low estimate hitherto formed of his intellectual capacity, but when seen in their familiar haunts and daily avocations by any solitary European who will go among them as one of themselves, the Veddahs appear in their natural manner. Most keenly sensitive to ridicule, and with but little hesitation in using the formidable bow and arrow in retaliation for it, care must be observed to repress all sign of merriment at their actions. It is presumably from this very strongly marked peculiarity that the statement has been made that the Veddah never laughs. Laugh he can and does when pleased, but his mirth partakes of the subdued watchful noiseless manner characterizing the hunter ever on the alert for prey or danger. In striking contrast to the indolence of many Oriental races is the incessant motion of the Veddah. Their slight wiry little frames appear almost incapable of fatigue in locomotion, while their muscular strength is far greater than

would be supposed from their meagre appearance. The shortest Veddahs measured were 4 feet 3 inches male, 4 feet 1 inch female ; the tallest 5 feet 6 inches male, 5 feet 2 inches female. A slight span cloth only is worn by the men, a larger one by the females of the village Veddahs, who are able to obtain the material, but the Rock Veddah, more isolated, either dispenses in the case of the men out hunting with even this slight garment, or, twisting a cord of bark round his waist, he resorts to the primitive leaf tucked under and held in position by the cord, the females adopting either a somewhat similar arrangement or a small apron of "riti" bark. This, however, is very rarely seen now, though invariably used during their ceremonial invocations to their departed spirits, or, as they have been incorrectly termed, "demons."

In order to arrive, as far as possible, at some definite conclusion as to the religious belief, and the traditions of the Veddahs, it was found imperative to enlist the services of a thoroughly competent interpreter, and for this purpose advantage was taken of the intimacy with the Veddahs of Mr. Somanadar, who undertook a trip into the Veddirata for this purpose. With so efficient an assistant, and after patient investigation, one or two points were definitely arrived at, and afterwards verified in other parts of the country.

Whatever the Veddahs may have held in former times certainly now no trace of demonolatry, properly speaking, exists among them. Where the idea has not been derived from a close acquaintance with Singhalese observances, Grahaism appears to be but indistinctly held, Capuism, pure and simple, appearing to form the whole of their religious belief ; and it is very remarkable that though the indigenous demons of the ancient Yakkhas are all of a highly malevolent and blood-thirsty disposition, the scanty mythology of the present Veddahs knows nothing of them, and though both Singhalese and Tamil for many centuries have firmly adhered to a most gross and revolting system of demon worship, no trace of it appears in the Veddahs removed from their immediate neighbourhood.

The immortality of the soul is invariably admitted by the Veddahs, but there appears to be no conception of future reward or punishment. The spirit released from the body revisits the scene of its earthly life for some two months, invisible and intangible, with neither the power nor the inclination to harm the survivors, but so great is the shrinking from the unseen presence that the spot where the death occurs is frequently deserted for some months. Invocatory chants to the departed are made on many occasions, but once a year a ceremonial propitiatory invocation attended with offerings of meat is made to the collective gods or deified spirits of their an-

cestors, and it is considered that the due observance of this ceremony ensures absolute immunity from all accidents, evil, or danger for the year following, with the remarkable exception of death or injury from the breaking of the vine ropes used in descending the precipitous faces of the rocks in quest of the honey and wax of the great "bommerah" bee. The village Veddahs have, however, acquired some of the chants and charms of their Singhalese neighbours, using the imported words in their entirety, but the "Hounihym" charm to inflict injury or harm upon others, so widespread among the Singhalese, does not appear to have been accepted by them. Various experiments had been made to ascertain this point but were invariably unsuccessful, the Veddah utterly disregarding the mystical preparations and incantations.

The belief in the existence of a spirit inhabiting the mortal body seems to be general. After death the disembodied spirit is supposed to wander about its accustomed haunts for a period of two moons, and after that to return to the grave, or place where the body was laid after death. The spirit has neither the power nor the inclination to injure anyone, although its presence amongst the living is considered undesirable. When a death occurs, the Veddahs on some occasions leave the encampment, or habitation if they have any, to avoid the spirits of the dead; and in other instances they appear indifferent and remain where they are, only taking the precaution to close the entrances of their caves or habitations, not apparently from fear of injury, but merely, as it were, regarding the spirit as something uncanny. Inquiry being made if the removal of the body or skeleton from a grave was not calculated to annoy the spirit, the query seemed to be a novel one to their minds; they had no fear of its attempting to revenge itself upon them, and they could not give an opinion as to the chances of the spirit remaining in the grave or accompanying the body on removal. The Veddahs exhibited no disinclination whatever to excavate the side of the grave, but kept a careful look-out for the instant a portion of the corpse or the skeleton was exposed, to start away from the spot and retire a few yards, waiting there a short time and then resuming their place and completing the exhumation. This short retirement from the spot was presumably to allow the spirit's free exit from the grave, though possibly it was to afford an opportunity of seeing if the spirit attacked those who remained on the spot, and, seeing no harm accrue, they resumed their work. Equal indifference was exhibited in assisting to carry away the bones, or, even in one case, a comparatively recently buried corpse, wrapped up in the burial bark, and conveying it some distance for preparation; and in no case was any repugnance shown to touching a dead body or skeleton. It has

often been asked in what light the Veddah probably views the desecration of the graveyard, and as far as was visible to those engaged in the task, total indifference prevailed. It must not be forgotten that until comparatively recently the bodies of the dead were not buried at all, but exposed amongst the trees, and consequently, after being forced to inter their dead, they may quite possibly view the resurrectionist in rather a favourable light than otherwise, the interment of the dead being almost as recent an idea as the disinterment. Current with their belief in the existence of the spirit after the death of the body, and as far as can be judged in some way mixed up with it, is the existence of demons. The mere fact of the statement made that there are no less than three millions of these demons suffices to show that to a considerable extent this idea has been an importation from neighbouring races, as is proved by the fact that the Veddah, like most very primitive races, is unable to count more than ten or a dozen, and this was conclusively proved on the present occasion. The term used for the three millions was Singhalese, and, on being questioned as to the meaning of three millions, they had no notion beyond "a very great many." A solemn ceremony is annually held to propitiate these demons, and the rites may be briefly described in the following manner: two or three pounds' weight of the flesh of some animal killed in the chase, with some wild honey, is placed in the centre of an open space, and in a circle round it the men of the encampment perform a measured solemn dance, entirely devoid of the grotesque antics which characterise their dancing on other occasions. Time is kept by a woman singing, the only occasion when a woman takes any part whatever in a dance. This offering is then taken to the tree in which the Niti or prince of the demons resides, and placed in the hollow if there is one; otherwise it is attached to a fork of the branches and covered with clay. During this performance there is none of the usual display of weapons which on other occasions are never absent. The annual performance of this rite preserves them from accidents in their hunting expeditions, and, should any such occur, the circumstance is attributed to an imperfect performance of the ceremony. Each of the eight "Virgas," or clans, amongst the Veddah has its own particular day for the observance of this annual rite; and, should an encampment include members of more than one clan, the ceremony has to be performed on more than one occasion, on the customary days of the different clans. No trace could be found of anything approaching to Nága worship. A Veddah declines to kill a cobra, saying it is useless doing so, as five or six others will appear to take its place. Other snakes, however, they evince no hesitation in destroying whenever they chance

to cross their path. At the same time, they expressed no abhorrence of the act when cobras were killed in their presence.

In regard to marriage ceremonies, by special request the usual rites were gone through by way of example. For nine or ten days the intended bridegroom brings presents of meat and honey to the parents of the girl of his choice. If these presents are accepted, it is considered that the match is considered in a favourable light. Some moonlight night all the Veddahs in the neighbourhood, in any way connected with the contracting parties, seat themselves in a circle in solemn and continued silence, as if pondering over the matter. After some half-an-hour of this taciturnity, the mothers of the young people—or, in default, their nearest female relatives—retire for a time into the jungle as if to discuss the match. Should it appear to be satisfactory, the two women return to the still silent circle, when the nearest male relatives retire to the jungle. On their return, in a similar way to that adopted by the women, the bridegroom quietly moves away to his dwelling place, and shortly afterwards every one of the party except the bride go away, leaving her alone on the scene of this singular performance. When all are gone and a sufficient time has elapsed to enable her to do so unobserved, she quietly follows her husband—and is thereby duly constituted his wife. It would be easy to draw a romantic and symbolical inference from these proceedings, though whether any such ideas pass through the minds of those who take part in them is extremely problematical. It is understood that a young man is willing to take under his protection a woman of the tribe. After solemn conclave her parents and relatives come to the conclusion to entrust her to his care, and they quietly and tearfully leave her alone in the forest glade. The man meanwhile has slipped away and awaits her decision in his primitive dwelling. Left without compulsion or persuasion to follow her own inclinations, and finding herself deserted by her parents and all that are near and dear to her, she modestly waits until everyone has left the scene, and quietly and unobtrusively proceeds to take her place by the side of her husband. Indeed, a pretty picture might be drawn of the deserted Veddah maiden—alone and unprotected in the moonlit solitude—in the garb of our first parents, “clad all in modesty,” stealing away through the moonlight to the rocky cave of the primeval forest. It would be interesting to learn the course of events, should she elect at the last moment to return to her parents instead of joining her suitor. Possibly such an event is altogether unknown.

An imaginary burial ceremony was also gone through, a plantain stalk representing the dead body, with pieces of leaf stalk folded across the breast for the arms. On the breast was placed a small portion of

kurakhan or other food, and the feet were drawn out straight. The corpse was enshrouded in a sheet of bark brought from the jungle. Of late years when a piece of matting is available, it is wrapped round the body inside the bark, and the whole is tightly bound with jungle creepers slung on a pole and carried off to the grave, that has meanwhile been made by other persons. Since the British ordinances have come into force in the island, burials underground have been made compulsory, but formerly the corpse was laid on the floor of the cave in which the living person had resided, a log of wood laid on each side, a few branches above, and a stone at the head. This latter idea of a head-stone, as well as placing the body with the feet to the rising sun, is, in all probability, a consequence of the advent of Christianity, and a natural accompaniment to the enforcement of burials by the authorities. Occasionally a palisading of jungle sticks is placed round the grave, a site for which is selected some 400 or 500 yards away from a track on the edge of those open spaces known as "talawas." The burial places are avoided as much as possible by the Veddahs in the course of their journeys about the country.

Conclusions drawn from several periods of five or six days' continuance in the encampments and caves of the Veddahs point to their place in the scale of humanity being very far higher than has been stated by previous writers on the subject. His domestic qualities are excellent; he is a good husband and father, and he generally gets the credit of being free from the vices of untruthfulness and petty thieving, so common amongst his neighbours. In corroboration of this opinion it is adduced as a proof that there are no regulations concerning these crimes current amongst them. There would appear to be a sort of ruling dynasty in each clan, handed down from father to son, and, in failure of heirs, the oldest man would in all probability be chosen as headman. In the decision of all grave questions, such as murder, the headman is assisted by the elders of the tribe. One remarkable custom appears to be still prevalent, although amongst the much-reduced numbers of the Veddah it seldom occurs. Should a body be found with marks which plainly show that death has been caused by the Veddah arrow, it is immediately concluded that improper relations had been attempted with some one's wife, and had met with well-merited punishment at the hands of the husband; and in such cases the body is interred without further inquiry or investigation. The appearance of the living, and examination of the remains of the dead, would argue an intense vitality, at any rate amongst the men, who when once they have passed through infancy and boyhood live to extreme old age, unless cut short by accident. The same cannot, however, at present be positively stated as regards

the females : indeed, appearances would tend to point to the contrary, a great number of young women apparently dying during their first confinement. This, however, can hardly be asserted as a fact, it being generally supposed that in all primitive tribes the act of giving birth to children is one of comparatively little danger.

In regard to the intelligence and mental capability of the Veddah, there can be but little doubt that he has been most unwarrantably underrated, probably in consequence of a lamentable want of opportunity for observation. He has not only been termed degraded, but it has been asserted that he verges upon absolute "idiocy." These are indeed no measured expressions, and such as are by no means justified by facts. Degraded he cannot be in the same way as the Radiyas or Doddha Veddahs, who from time immemorial have been so down-trodden by the arbitrary supremacy of those who are considered his superiors in the social scale that he dare hardly call his soul his own, or his body either; for the Rock Veddah has never been subjected either morally or physically to the demoralizing influences of either caste or conqueror. He still remains, as he always has been in the past, free and untrammelled, adhering to his own customs and inclinations, neither down-trodden by others nor in any sense degraded from a higher to a lower state of humanity. The impressions regarding "want of mental capacity" and his "verging on idiocy" would appear to have principally arisen from the mask of stolidity and impenetrability which is at once assumed when the Veddah is confronted with strangers. Those of the tribe who have been publicly exhibited in Kandy and elsewhere have found themselves exposed to the examination of curious and obtrusive crowds, and in some instances to jeers and ridicule, which they would naturally resent. Indignation—and no little fear—as might well be expected, tend to render them apparently stupid and idiotic. But when seen under natural conditions, in their own habitations, surrounded by their families and their own people, they exhibit themselves in a totally different light. Except for a certain dignified and subdued manner, they show but little difference in behaviour from the Tamils and Singhalese, laughing, singing and talking freely in an undertone amongst themselves. The children of the family quietly play about, using balls, little figures, and other articles as playthings. One thing, no doubt, prevents his indulging in laughter amongst strangers—and that is his own extreme sensibility to ridicule, a susceptibility which he naturally supposes attaches to others as well as himself. This impatience of anything approaching to ridicule was strikingly exemplified on two occasions during this trip. Watching the grotesque appearance and motions during one of the dances, the observer could not help

laughing, when quick as thought an arrow was shot from a bow passing within an inch of his head, and the dancers rushed away from the spot in high dudgeon. The other occasion was when a party of the Veddahs were exhibiting before several European and native spectators, some of the latter began to laugh when the Veddahs handled their bows with angry expressions, and the risibility of the spectators had to be promptly repressed.

As an example of their capability of readily grasping a new idea, it was curious to see how rapidly they made out particulars of a photograph of a cocoanut estate which was shown to some of them at Nilgalla ; they quickly recognized and pointed out the leaves of cocoanut palms, the bungalow and the figure of a European—no mean proof of their intelligence. In the same way, an opportunity was afforded of disproving the assertion that the Veddah is incapable of distinguishing colours. Selecting an article of a certain colour, they readily brought a similarly tinted article from another encampment. A ludicrous incident, however, occurred when shewn their reflections in a mirror : the intense astonishment and fear expressed in the man's countenance at beholding what he evidently supposed was some spirit looking at him, and the haste with which he seized his miniature axe and peered behind the mirror, as a cat or monkey would do under similar circumstances, was amusing in the extreme.

Their well-known skill in the use of the bow and arrow seems to be gradually becoming a thing of the past. Whilst some of the elder men evidenced such power and skill as to effectually prove the deadly nature of the weapon, the younger generation seems inclined to allow it to fall into disuse. The necessity for it is, no doubt, gradually declining as more attention is paid to agriculture. On one occasion an arrow was shot quite through a wild sow, and stuck in a bank behind her, and the drawing of the bows themselves, severely taxed the strength of the European.

The use of the ordinary earthenware chatty of different varieties appears to be unknown amongst some of the more isolated parties ; gourds and leaf baskets being generally used instead. Fire was produced from the friction of a stick and piece of wood, but iron and pieces of quartz were seen, evidently taking the place of the flint and steel used for that purpose.

In one encampment of the Rock Veddahs, ten men were found in absolute nudity, whilst the women of the party apparently wore a small portion of the skin of some animal, but presently produced some remnants of cloth which they donned during the stay of the visitors. In every other instance, the Veddahs were to some extent clothed, and the leaf girdles were constructed merely to show how it was done.

The Veddah subsists on honey, yams, berries and the rudely roasted flesh of the game falling to his arrows, exception being taken to bear, jackal, and leopard. It has been stated that fowl and oxen were also tabooed, but if that were so in earlier times, decreasing game or altered ideas had removed the restriction, and the flesh of both is now eaten without hesitation.

Inquiry was made into the current idea that the Veddahs opened the bodies of the slain amongst their enemies of other races, and extracting the liver, preserved it carefully till such time as they were called upon to exert themselves against those who would hurt them, be they man or beast, when they would devour a small portion by way of raising their spirits and stimulating their bravery. They admitted that such was the case in the time of their forefathers, and until comparatively recent times, one specimen being shown as a sample of what had been carefully preserved for a great number of years.

The Chairman, at the close of the lecture, remarked that they were all very much obliged to Mr. Stevens for all the information he had given them in regard to this interesting tribe, and he thought it was the duty of one or other of the branches of the Society to work up further enquiries in relation to them. Many were aware of the fact of the existence of several kindred hill tribes in Kumaon, Nepal, and Assam, who lived exactly like the Veddahs, and who, like them, entertained the belief that they were far superior to the natives of the plains. Several traditions were common to all, and a good deal of what was said seemed to show a connexion between these Veddahs and some of the wild tribes in Chutia Nagpur and the Vindhya Hills.

LIBRARY.

The following additions have been made to the Library since the meeting held in August last.

TRANSACTIONS, PROCEEDINGS AND JOURNALS,

presented by the respective Societies and Editors.

- Amsterdam. Koninklijk Zoologisch Genootschap. "Natura Artis Magistra,"—*Bijdragen tot de Dierkunde*, Vol. XIII, No. 4.
———. *Revue Coloniale Internationale*,—Vol. II, Nos. 2—6; Vol. III, Nos. 1—3.

- Baltimore. Johns Hopkins University,—American Chemical Journal, Vol. VIII, No. 4, August, 1886.
- . —. American Journal of Mathematics,—Vol. VIII, Nos. 3 and 4, July and August, 1886.
- . —. The American Journal of Philology, Vol. VII, No. 2, July, 1886.
- . —. Circulars, Vol. V, No. 51, July, 1886.
- Batavia. Bataviaasch Genootschap van Kunsten en Wetenschappen,—Notulen, Vol. XXIV. No. 2.
- . —. Tijdschrift, Vol. XXXI, No. 3.
- Berlin. Berliner Entomologische Zeitschrift,—Vol. XXX, No. 1.
- . Der Königlich Preussischen Akademie der Wissenschaften zu Berlin,—Sitzungsberichte, Nos. I—XXII, 1886.
- Bombay. Bombay Natural History Society,—Journal, Vol. I, No. 1, January, 1886.
- . The Indian Antiquary,—Vol. XV, Parts 186—188, August to October, 1886.
- Boston. Boston Society of Natural History,—Memoirs, Vol. III, Nos. 8—11.
- . —. Proceedings, Vol. XXII, Parts 2—4; Vol. XXIII, Part 1.
- Bruxelles. Musée Royal D'Histoire Naturelle de Belgique,—Bulletin, Vol. IV, No. 2.
- Calcutta. Geological Survey of India,—Palaeontologia Indica, Memoirs Vol. I (ser. XIV), Nos. 3; Vol. IV (ser. X), No. 1.
- . —. Records, Vol. XIX, Part 3.
- . The Indian Engineer,—Vol. I, Nos. 10—13; Vol. II, Nos. 1—3.
- . Original Meteorological Observations,—April and May, 1886.
- Copenhagen. K. Nordiske Oldskrift-selskab,—Aarbøger, Vol. I (2nd series), No. 2.
- . —. Mémoires, 1886.
- Chicago. The American Antiquarian and Oriental Journal,—Vol. VIII, Nos. 4 and 5, July and September, 1886.
- Edinburgh. Royal Society of Edinburgh,—Proceedings, Vol. XII, No. 118; Vol. XIII, Nos. 119 and 120.
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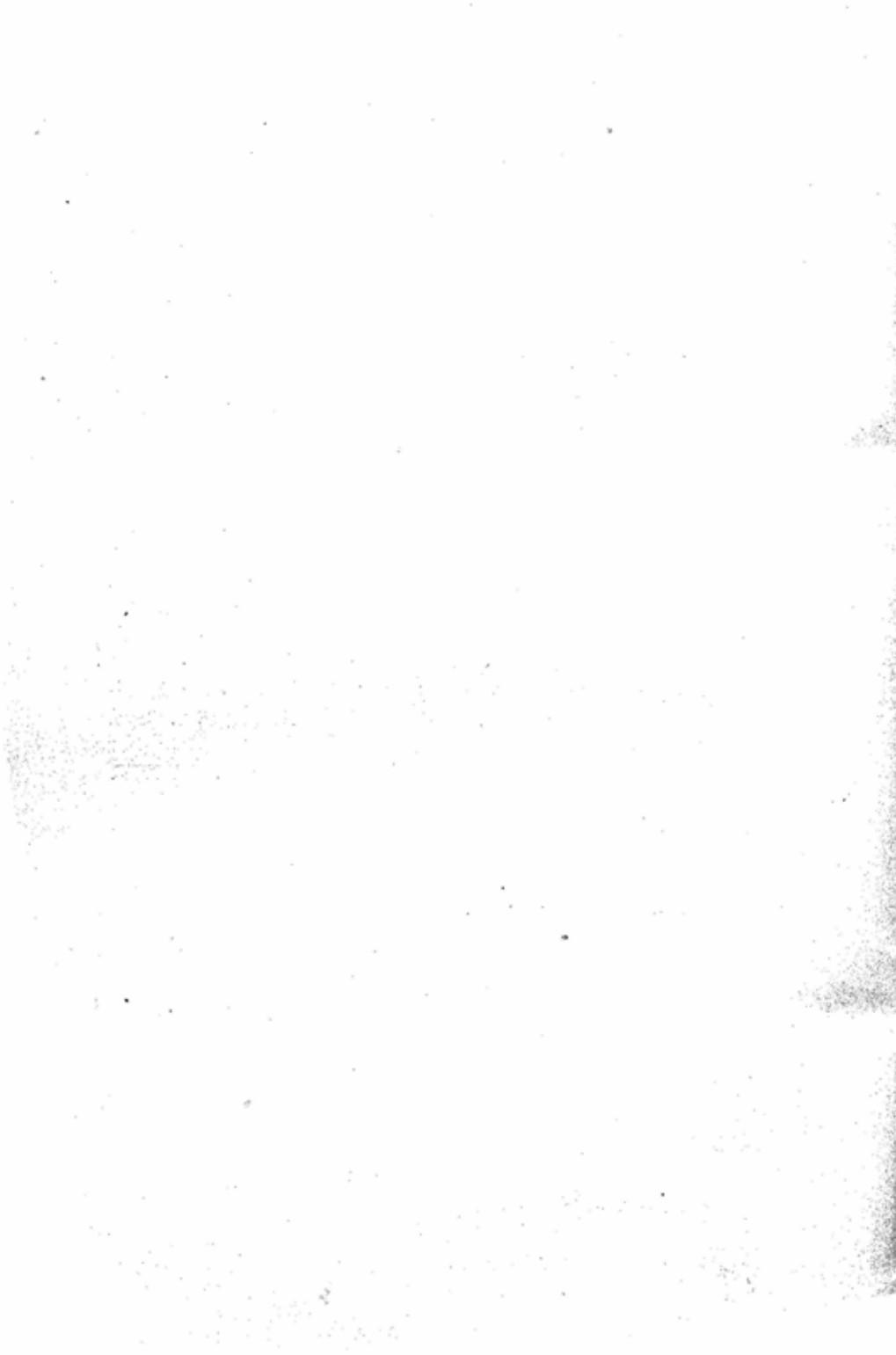
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PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR DECEMBER, 1886.

The Monthly General Meeting of the Asiatic Society of Bengal was held on Wednesday the 1st December 1886, at 9 p. m.

E. T. ATKINSON, Esq., C. S., President, in the Chair.

The minutes of the last meeting were read and confirmed.

Twenty-eight presentations were announced, as detailed in the appended Library List.

The following gentleman, duly proposed by the Council at the last meeting, was ballotted for and elected an Associate Member:

Babu Sarat Chandra Dás, C. I. E.

The COUNCIL reported that Lt.-Col. Godwin-Austen had applied to have his name removed from the list of members, and recommended that in consideration of the part he had taken in the investigation of the fauna and flora of India for many years, the Journal and Proceedings of the Society be sent to him free of charge for the rest of his life.

Carried unanimously.

The following gentleman has intimated his wish to withdraw from the Society :

Hon'ble H. J. Reynolds.

The SECRETARY announced the death of the Hon'ble James Gibbs.

The PHILOLOGICAL SECRETARY exhibited 2 gold and 3 silver coins presented by the Bombay Branch of the Royal Asiatic Society, being part of finds of Treasure Trove in the Kandeish and Belgaum districts, and stated that the gold coins are known as the Hun coins of Bijapur, or Visiapur, a celebrated city of the Dekhan; they exhibit distinct emblems, the meaning of which has not been discovered. They are

of considerable antiquity, and are supposed to have been struck by one of the Hindu princes who reigned at Bijapur before the 14th century when the Muhammadans established their authority in that city. The emblem appears to be a rude imitation of a Hindoo temple surrounded by stars meant to imply that the worship of the gods is the path to glory and long life.

These coins are referred to by Marsden and Tavernier who are unable to ascribe to them either date or reign. They are also described by Dr. G. Bidie in the Asiatic Society's Journal, Vol. LII, Part I, p. 41,

Gold very inferior, Weight	·38	of a Tolah, Whole Hun ... 1
do.	·156	do., Half Hun ... 1

2

The PHONOLOGICAL SECRETARY read the following report on a find of 405 old silver coins in the Maldah district.

I. Report on 405 silver coins forwarded by the Collector of Maldah with his letter, No. 540, dated 5th September, 1886.

1. The coins were found buried in a brass *lotá* at Beltallah ghat, on the right, or west, bank of the river Mahánanda, in village Kutabpur, close to the Civil Station at English Bazar.

2. They are all round silver rupees of the following Moghul Emperors:

	No. of specimens,
1. XIII. <i>Muhammad Shdh</i> , A. H. 1131—1161 = A. D. 1719—1748 ; Marsden's No. DCCCCXVIII, p. 666 : mint Murshidábád, years of reign 3-5-19-20-24-27-28-29	19
2. XIV. <i>Ahmed Sháh Bahádur</i> , A. H. 1161—1167 = A. D. 1748—1754, Circular Area. <i>Obv.</i> name of Emperor and date. <i>Rev.</i> legend, mint and year of reign : mint Murshidábád, years of reign 2-3-5-6	23
3. XV. <i>Alamgír Zdná</i> , A. H. 1167—1175 = A. D. 1754—1761 ; Marsden's No. DCCCCXXIV, p. 675 : mints Murshidábád and Golkonda, years of reign 1-2-3-4-5	77
4. XVI. <i>Alam Sháh</i> , A. H. 1175—1220 = A. D. 1761—1806. Marsden's No. DCCCLXVIII, p. 684 ; mint Murshidábád, years of reign 2-3-4-5-7-8-9-10-11-12-19-29	286
Total ...	<hr style="width: 20px; margin-left: 0; margin-right: auto;"/> <hr style="width: 20px; margin-left: 0; margin-right: auto;"/> 405

The following papers were read—

1. *On probable changes in the Geography of the Panjáb and its rivers: an Historico-geographical study.*—By R. D. S. OLDHAM, A. R. S. M. (Postponed from last meeting.)

(Abstract.)

This paper is divided into three parts and an introduction; after pointing out that the subject is one on which geologists not only have a claim to be heard, but must be the last court of appeal as to whether the hypotheses proposed by professed scholars and historians, to whom the subject is generally left, are admissible or not, the author goes on to treat of *The Ancient course of the Indus through Sind.* He notices the generally accepted idea that the Narrá is an ancient course of the Indus and the physical difficulties that follow from that idea; not only is it impossible to account for the change of the channel of the Indus from a lower to a higher level to enable it to flow through the gorge at Rohri, but it would be impossible for the Indus flowing into the Narrá to send a branch past Hermetelia or Bráhmanábád, unless water was gifted with the power of flowing up hill in the time of Alexander the Great.

He notices the peculiarity of the Indus which flows through a rocky gorge at Rohri, while on either side the ground slopes down to a lower level; it is difficult to account for this except by supposing that the Indus alluvium was formerly higher on the east, so as to allow the Indus to break away to the westward and find the gap it now flows in, and that the level of the alluvium to the east was subsequently lowered by the action of an independent stream.

He notices the existence of traditions supporting the generally accepted idea, but points out that these often arise as an attempted explanation of existing facts and cannot be accepted as more than an indication of a line of research.

After noticing various traditions and authors whose evidence is inconclusive or conflicting, he passes on to consider the evidence that may be gleaned from the manuscripts translated in the first volume of Sir H. Elliot's History of India, the principle of which is the Chach-námá, in which the march of Chach, and subsequently of Muhammad Kasim, northwards from Aror is given, and the first river crossed is the "Biyas;" moreover Muhammad Kasim had crossed the Indus some time before, and there is no mention of his crossing it again, so that it is clear that in the 8th century the Indus already flowed west of Aror. In the account of the campaign of Muhammad Kasim it is stated that some marches after he crossed the Indus he came to a river called the Wadhawah (or Dadhawah) which, as is proved by a subsequent reference,

was navigable. Now it is a noteworthy fact that this name is unlike any known to be applied to the Indus, but in the north of Sind there is marked on the map a dry bed of the river Wundun which can be traced to within twenty-three miles of the Narrá (the intervening course being obliterated by the overflow waters of the Indus) and is continuous with a dry river course which can be traced through Bhawalpur as far as Baghla, in Latitude 28° 16' Longitude 70° 33'.

The next part is devoted to the *Lost river of the Indian Desert*. The course of this is picked up again at Deráwar, 56 miles from where it was lost near Baghla, and thence can be traced continuously through Bhawalpur, Bikanir, Sirsa, to Tohána in Hissar. This channel is known as the Hakrá, Sankrá or Sotar, and by the universal tradition of the desert was formerly a flowing river.

To account for the drying up of this river we must either invoke a diminution of rainfall in the hills or a change in the course of one of the great rivers, either the Jumná or the Sutlej. The first of these is inadmissible on physical, the second is inadmissible on historical grounds, so that there remains but the third to be examined.

An objection to this supposition has been urged, that the channel of the Hakrá is too shallow for it to have ever carried a large river, and that its soil is very different to the silt of the Sutlej; this is, however, due to the action of the Ghuggur, which has deposited its alluvium along the course of a river-bed it could never have formed itself, thus accounting for the shallowness and the difference between the soil of the Hakrá and of the Sutlej channel.

The historical evidence is very conflicting, for though the Vedas and the geography of Ptolemy both appear to be in agreement with modern geography, the historians of the early Musalman invasions of India and the native annals of Jessalmir use the term "Biyah" for the united Sutlej and Beas, and "Panjnad" for the Indus, a nomenclature which points to the conclusion that the Sutlej can in their time only recently have become a tributary of the Indus.

The historical evidence is on no point conclusive, but there are between the Sotar and the Sutlej a number of dry river channels, all tributaries of the Sotar, most of which can be traced to within a few miles of the present or former course of the Sutlej; and some of which at least are locally regarded as deserted channels of the Sutlej. This makes it certain that it was from the Sutlej and not from the Jumna that this lost river derived its water, and the change of course must have been at an extremely recent period, geologically speaking, even if not so recent as appears to be indicated by history.

The third part of the paper is a brief consideration of the *Saraswati*

of the *Vedas*. The author points out the improbability, to say the least of it, that the existing Saraswati could ever have been regarded by any rational being as a fit associate for the rivers of the Punjáb and the Indus, still less to be exalted above them all as the "chief and purest of rivers." There are weighty objections of a physical nature against supposing that the change can be due to diminished rainfall in the Himalayas. Mr. E. Thomas has suggested that the Saraswati of the *Vedas* was in reality the Helmund, and works his theory out with great ability and ingenuity, but it is almost as difficult to suppose that the ancient Aryans could have confused the insignificant Saraswati with the Helmund merely because it flowed into the tank of Kurukshetra—allowing that to have existed in the Vedic period—as that they could have originally applied the grandiloquent language used to the existing Saraswati.

The only other possible hypothesis involves a great change of hydrography, and as we cannot suppose any change of number or position of the great rivers within the hills, the Saraswati can only have been the old course of some other river, either the Sutlej or the Jumna. The former of these is fully accounted for and only the Jumna remains.

Whether the Saraswati was the Jumna or no, it is certain that within the recent period of geology the Jumna must have flowed towards the Punjáb, and if we may suppose that it did so when the Aryans invaded India, we have accounted for the Saraswati, and we find that the tradition of the Saraswati joining the Ganges at Allahabad is almost a literal representation of what has taken place. The name Jumna favours this view, for when the Brahmaputra in the commencement of the present century broke away from its old course to join the Ganges the new channel thus formed was christened the Jumna, a name it bears to this day, while her old bed now deserted by the main stream, and only receiving any accession from it when the river is in flood, is still known as the Brahmaputra.

The only real objection that can be raised to this hypothesis is, that the Saraswati and Jumna are both mentioned in the *Vedas*, and even in the same hymn. How far this may be a valid objection the author cannot say, but it may be explained by the fact that the change of course would not be sudden and abrupt, but a gradual transfer of the bulk of the water from one channel to another, so that the Jumna might for a long period have divided into two streams where it left the hills (as is the case with the Diyung in Assam at the present day) one channel, the Saraswati, flowing to the Punjáb, the other the Jumna, to the Ganges; this hypothesis is not susceptible of proof, nor of disproof, for the geographical references in the *Vedas* are invariably incidental, and seldom more than verbal, but it is physically possible, and does not

compel one to form so low an opinion of the intelligence of the ancient Aryans as any other hypothesis would involve.

In conclusion the author deprecates any claim to originality; there is nothing in his paper that has not been suggested before at one time or another, and all he claims to have done is to collect and develop these suggestions in the hope that they will prove acceptable to those who may be interested in the study of the same question from a purely historical point of view.

The paper will be published in full in Journal, Part II.

2. *Notes on Indian Rhynchota, Sub-family Plataspina.*—By E. T. ATKINSON, ESQ., PRESIDENT.

(Abstract.)

The author remarked that this was a continuation of his 'Notes on the Indian Rhynchota.' Those already published in the Society's Journal completed the Homopterous section of the Order, and the family *Coccidae* in part. The present series will embrace the Heteropterous section and begins with the *Pentatomidae*. The first subfamily comprises the *Plataspina*, of which the following genera are noticed:—*Tarichea*, 1 species; *Galacta*, 1; *Oncoylaspis*, 1; *Poseidon*, 1; *Brachyplatys*, 9; *Coptosoma*, 11, one new species. The second subfamily embraces the *Cydnina*, of which we have the following genera represented in India:—*Ocephalocteus*, 1; *Stibaropus*, 6; *Lactistes*, 3; *Scoparipes*, 1; *Adrisa*, 2; *Athus*, 3; *Cydnus*, 1; *Gampsotes*, 1; *Macroscytus*, 3; *Geotomus*, 3; *Chilocoris*, 3; *Peltocrys*, 1; and *Tritomegas*, 1. The genera *Brachyplatys* and *Coptosoma* require revision, which can only be done well by consulting the types, and is beyond the resources of any one working in India. For the *Cydnina* we have the recent careful monograph of M. Victor Signoret with numerous figures which leaves little to be desired. Mr. Atkinson also pointed out the need there is for further exertions on the part of those who care for Entomology to increase our only national collection in the Indian Museum, which at present does not contain one half even of the species recorded as occurring in India.

The following is a brief description of the New Species of *Coptosoma* mentioned above:—

COPTOSOMA ASSAMENSIS, n. sp.

Bronzed-black, shining, very finely and closely punctured: lateral lobes of the head yellow, with a very fine blackish external limbus: eyes large, prominent, deep castaneous: lateral margins of pronotum (enclosing anteriorly a black longitudinal streak) broadly forwards,

narrowly hindward, also four transverse oblong spots (2 and 2) in anterior part, the pair nearest anterior margin smaller, and a broadly oval spot at each posterior basal angle, yellow: the third basal part of scutellum black, arcuate hindward, with two yellow oblong transverse elongate spots before the basal impression: sides very broad and apical, two-thirds rather sordid yellow, thickly and coarsely punctured fuscosus, with a large rounded black spot in the middle of each posterior angle: abdomen beneath shining black; feet sordid flavescent. Long 2½-3; broad 2½ mill. From N. E. Assam.

The paper will be published in full in Journal, Part II.

The subject of Conversation by the Natural History Secretary was Mimicry in Nature, protective and offensive.

LIBRARY.

The following additions have been made to the Library since the meeting held in November last.

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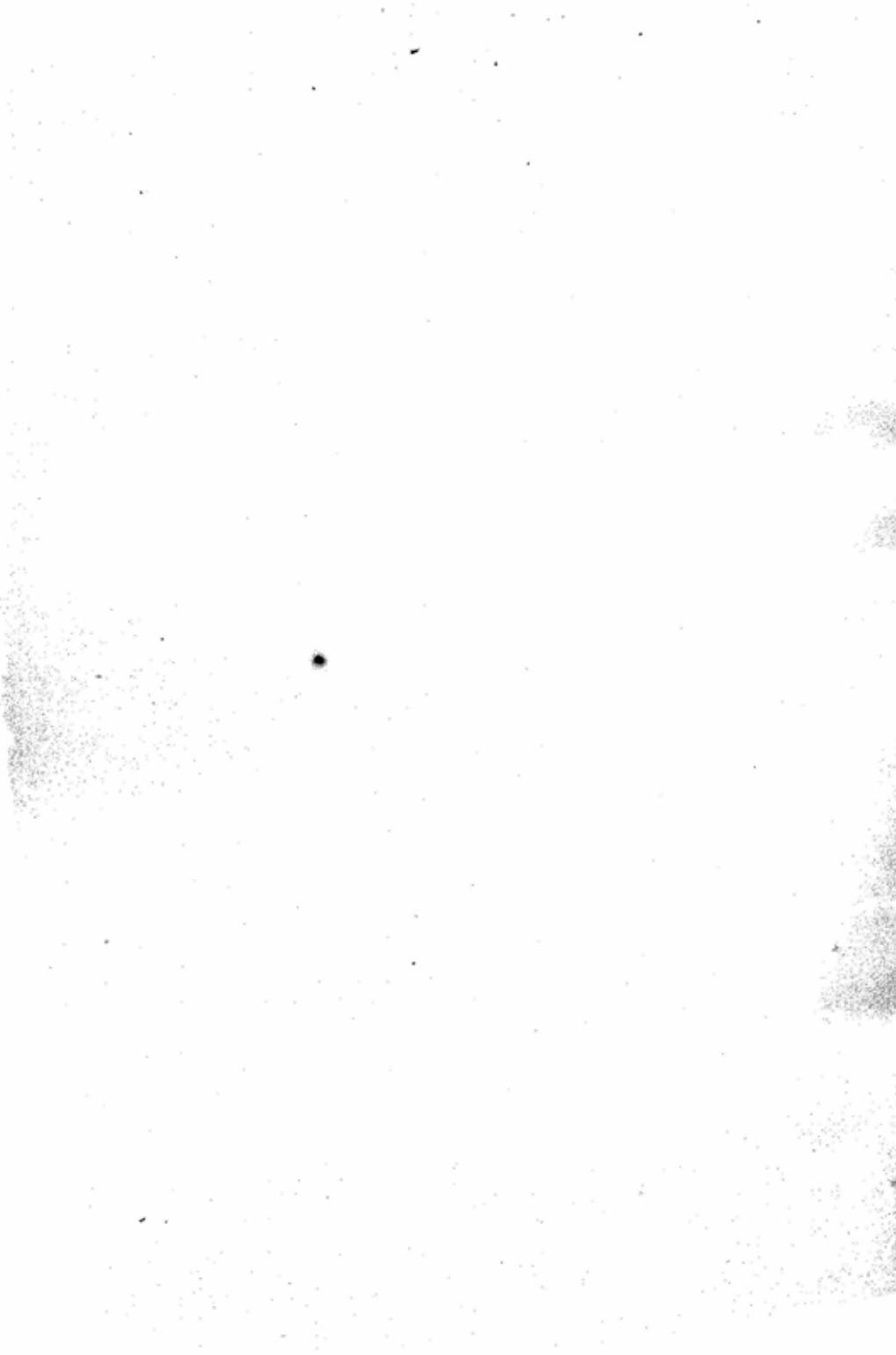
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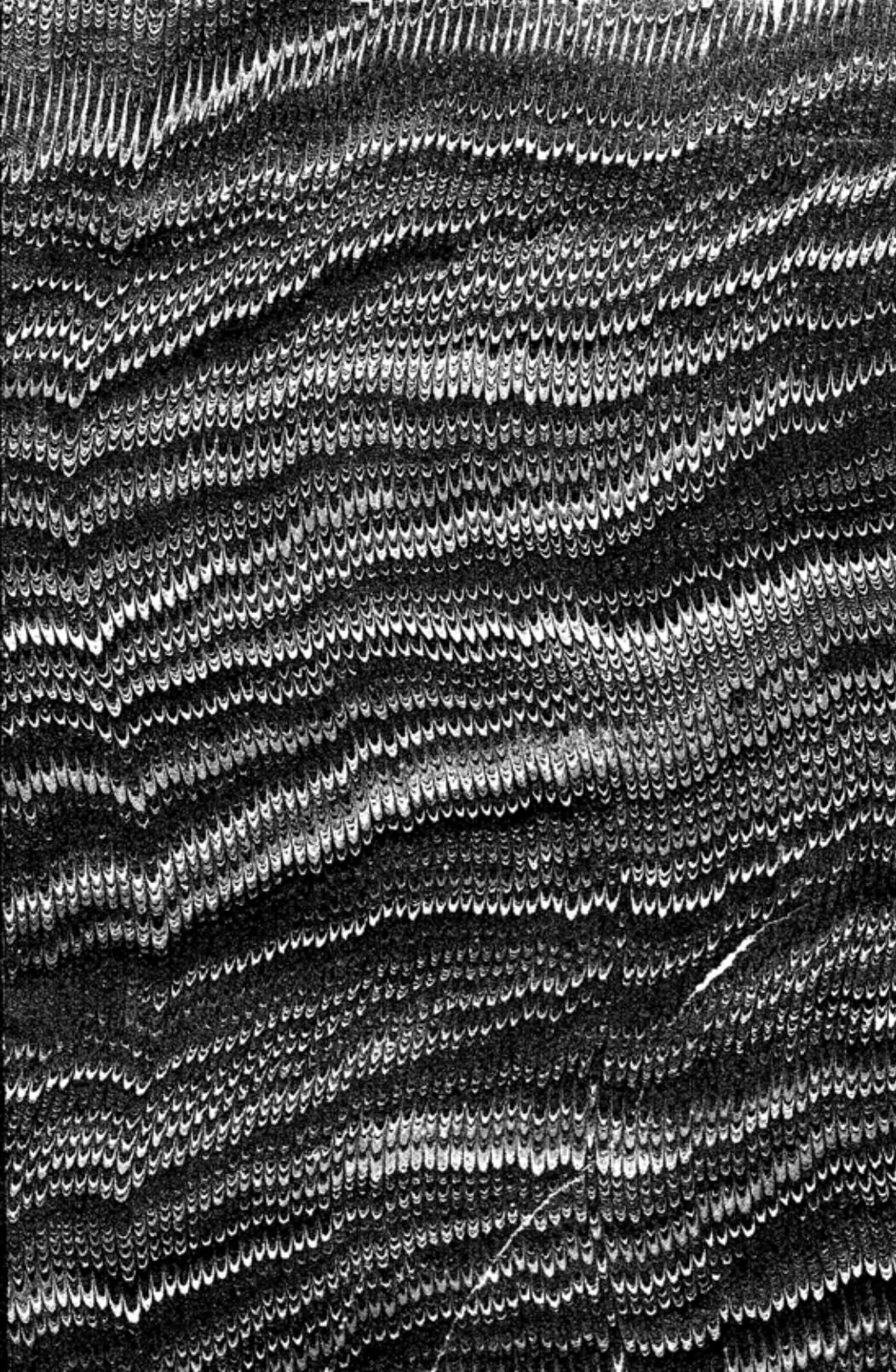
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